

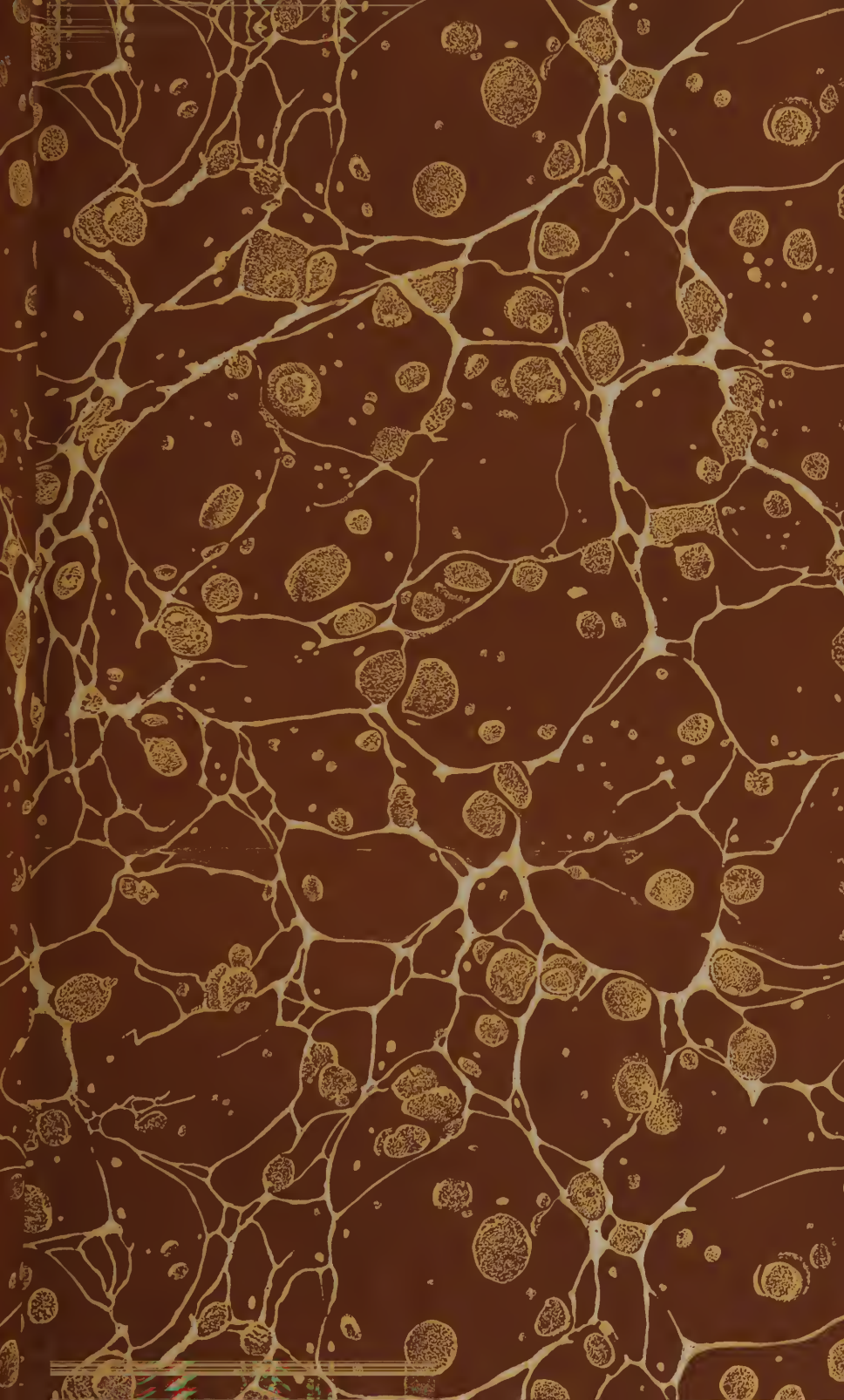
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THE

ECLECTIC

PRACTICE OF MEDICINE:

(DISEASES OF CHILDREN.)

BY

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CINCINNATI:

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PREFACE BY PROF. R. S. NEWTON.

IN the study and treatment of those diseases which more especially affect children, every nobler feeling of the human heart is called into active exercise, and this is so for a variety of reasons, among which may be mentioned the weak and helpless condition of the child even in a state of perfect health; its inability to convey was a true history of the symptomatic feelings; its incapacity of understanding the necessity of resignation to circumstances; the innocence of the sufferer: because whatever law of health may have been violated, the child was ignorant of it, and has, therefore, been made a victim to the ignorance of others; and, finally the love, happiness and hopes of parents are centered in the child.

Very much might be said as to the differences in the manifestations of disease as it occurs in adults or children, but any practitioner will, if he has had any considerable experience, at once perceive that he will have to abandon all hopes of learning much of a case when the patient is a child, that might be easily derived from the expressed feelings of an adult. The natural language of disease, which is always very reliable when understood, has here to be closely watched and literally interpreted. It is quite probable that very much of infantile mortality, arises from inability on the part of practitioners to appreciate the value of diagnostic symptoms. There is a language of disease, that varies with each form as much and as certainly as the spoken languages of men differ, in different nations. It is a well know fact that some physicians are very successful in the treatment of one class of diseases, while another, equally as simple, baffles their most earnest efforts. It has always seemed to us that this circumstance

found its explanation in the fact that such practitioners had only mastered the natural language of one class of disease.

With this conviction we have exerted ourselves to make plain the symptoms of each disease, and, as far as convenient, to give the rationale of those symptoms. Evidently an inflamed stomach will give symptoms very different from Pneumonia, and we should commit a great mistake by treating them exactly alike: yet both are *inflammations*, and there are to be some principles observed in the treatment that will be common to both. Now it is the modification of the treatment, consistent with the difference of conditions and symptoms, which must be observed in order to be successful in practice.

The ailments of children require the very closest scrutiny, not that the disease itself will be more difficult to treat than if it was in an adult; but we have in the child, to rely on symptoms alone, for any history of the case given by parents may be very much warped by the ignorance and prejudices of the relator.

If a mother had lost two or three children from inflammation of the bowels, she would not be likely to think of any other disease and to bend the symptoms to its indication. Physicians should, therefore, be on their guard, and for themselves examine closely the condition of every organ—the lungs, skin, bowels, etc.;—always remembering that the indications are modified by age, sex, constitution, etc.

As a general remark, children require much less medicine, and of a simpler kind than adults, even when proportioned to their age. The chief indications are the removal of obstructions, for when this is done, the child's system will generally accomplish the remainder of the cure.

In the preparation of this work it has been an object to furnish the profession with a reliable work on Infantile Practice, and for which we can vouch, since the work is the result of long experience in the treatment of this class of diseases. We have endeavored to make the work essentially practical, and to be as brief

and systematic as possible. It is true, that every such effort at brevity and system will, as it has in this case, somewhat detract.

But it may be asked if there are not already works enough on this subject? We beg to answer: there are quite enough, but unfortunately, not of the right kind. Many of them are almost identical in practice, and very few are founded on the enlightened views of Modern Pathology. This is the only work representing the department of the Eclectic practice.

The existence of the Eclectic branch of the Medical profession is too brief, although its development has been unprecedented in the history of innovations and professional revolutions, to have produced a library for the instruction of its disciples and the conversion of the public. The leisure of its professors and qualified practitioners has been devoted to doing battle to maintain existence against the increasing assaults of their more conservative brethren. But now, as their independence—their ability to maintain an independent existence, is tacitly acknowledged, they are bestirring themselves to advance and disseminate their doctrines—doctrines which have guided them to a practice that has, for success, been unrivaled at any period since the days of the Father of Medicine.

The universally-acknowledged want of text-books to promote the advancement of Eclectic students, has alone impelled the authors of the following pages to bring them forth, as an embodiment of the practice in those forms of disease to which they are devoted; and, considering the multifarious duties through which they were prosecuted, it is not reasonably to be supposed that they are without errors and imperfections; but the authors ardently hope, indeed, they are much disposed to believe, that none will be discovered which will prove mischievous in practice.

It should be known, by the public, that both authors were regularly educated in strictly orthodox Allopathy—that they believe themselves to have abandoned no fact and no truly-founded principle which they acquired, and that, inasmuch as they were

not bound, by an oath of allegiance, to the false doctrines and the mischievous practice that were taught to them (for, certainly, no one will contend that a professor ever lived who taught no error), they felt, and still feel, that they have not forfeited their right of private judgment, nor their privilege to abandon errors, when discovered, no matter whence obtained, and to embrace truth, no matter by whom discovered.

Whatever may be the feelings and the opinions of those who differ with us, on professional subjects, we can, with unfeigned sincerity, declare that we feel grateful to those professors, and to those writers, who have, in the least, contributed to the making us what we are. If we shall, even to a small extent, liquidate the obligation we owe to those who have preceded us, by our labors in the following pages, a large portion of our ambition will be achieved.

When we commenced this work, we remembered how much we had been bored by those professors who seemed to regard it as all-important that they should advance authority for every opinion they uttered. Students visit medical schools, not to obtain and to remember the names of those who have placed upon record a medical opinion, but to be informed, by the professors, as to what are the standard or generally-received opinions or doctrines of the profession, and for the same purpose they read text-books. Special doctrines and opinions are subjects of future investigation.

In view, then, of the impatience with which students read quotations, and their indifference to authorities in text-books, we have, as little as possible, given reference to authorities. We have simply labored to represent the profession, except where it has been our fortune to differ from it, and in such cases we have given our reasons for so doing.

Professor POWELL, one of the authors, has for thirty years given especial attention to certain Physiological and Pathological studies, the results of which are embodied in this work, and for

the subject-matter of the last book he claims an originality, and the development of laws, vital and otherwise worthy of the serious attention of the profession. In these views professor NEWTON fully coincides.

The authors are perfectly aware that some errors have crept into their work: it could hardly be otherwise. The science of medicine is a progressive one, in which discoveries are being made every day, as the abundant new matter of our numerous Journals fully attest.

The labor of preparing a text-book for the Eclectic branch of the profession is very great, since we claim to, and do, so far as we are aware, investigate every practice, every system, and then by the standards of reason and experience adopt that practice which we deem to be the best. We are open to the appeals of truth, let them come from whence they will. This practice of selecting has brought us in violent conflict with other systems, and yet every conscientious practitioner is in this sense an Eclectic.

We have rejected the use of the lancet, in the treatment of disease, altogether, and not from a morbid desire to stand in opposition to our fellow practitioners, but because the labors of morbid anatomists have most clearly shown the inutility of venesection in any case. The common experience of the profession has sustained the morbid anatomists, and proved the justness of our opposition to bloodletting as early as 1830—more than a quarter of a century ago.

At that time almost every disease found its treatment in bloodletting, but now the sanguinary advocates are rarely or never found, and even those who stand very high in the profession, both in Europe and in this country, are now seriously questioning the propriety of ever bleeding their patients in any case whatsoever.

We have also rejected the use of mercury in any form; not because it has not a variety of medical properties, but because

it leaves unfortunate traces of its action; because injudiciously given it is very dangerous, and because we possess better agents, and not objectionable on account of sequela. Calomel has always been, and always will be a cathartic, but it is by no means the best, and we refuse to use it because it is not the best.

We also reject the use of lead, arsenic and antimony, not because they are minerals, but because we have better, more reliable and safe astringents, alteratives and emetics. The records of death's doings will show to the end of time the assistance the grim monster has thus derived from poisonous drugs in the hands of quack doctors.

To rid our profession of such a charge, we have thought it expedient to discountenance the use of these more dangerous remedies altogether. And, certainly, the rejection was wise, for our practice has proved to be more successful than that of any other class of physicians, which we attribute entirely to the superiority of our remedies and to our advanced diagnosis and pathology.

If we have succeeded in putting the profession in possession of a reliable treatise on the Diseases of Children, we shall feel amply rewarded for the labor of its preparation.

CINCINNATI, *June*, 1858.

PREFACE BY PROFESSOR POWELL.

THOSE who shall be benefited by that portion of the following work which devolved upon the writer, must feel themselves, to a no small extent, indebted to Professors NEWTON and FREEMAN—who, being upon a former occasion, his colleagues, had frequent opportunities of hearing his opinions upon various physiological and pathological subjects, and being pleased with his views in general, and in particular with his modes of thinking and investigating, have been principally instrumental in causing him, in this respect, to become an author.

It will be found, furthermore, that in his portion of the work, there is not that rigid adherence to the subject before him, which is almost universal in the profession, and for this peculiarity the above-named professors must be held responsible, because they advised him to pursue that course which was characteristic of his professional lectures, which, being extemporaneous, gave him the latitude of suggestion, upon relative subjects, for the purpose of elucidation, illustration, or instruction. To this circumstance, perhaps, more than to any other, they attributed that profound attention which his lectures always commanded.

With reference to the professional library of the age, he acknowledges himself to be greatly indebted,—to the extent of his means. It has served him for the purposes of suggestion, the support of truth, and the illustration of error; but, knowing how much students are bored by learned references, he has avoided them as much as possible. This omission, with him, has, perhaps, a deeper foundation, and one that he would plant in the mind of every student. He has never permitted any author to produce in his mind a feeling of conviction, and for the reason that we have but one certain source of truth—and that is nature. All authority, for and against all subjects, he respects, until by an appeal to nature, it is found to be false; and it is by this rule that he would be tried with reference to any new or novel opinion he has advanced.

He is aware that, in this sectarian age, his character in this respect, is as novel as any opinion he may have advanced; and, consequently, he has not still to be informed that his abandonment of the lancet and of all indigestible substances, as remedial agents, has so affected those who still use them, that they can not sufficiently suspect it to be possible that any truth could drop from his pen, as to read after him. Of course, in this respect, he believes that there are a few—very few exceptions. That such a state of the public mind should exist with reference to religion and politics, is to be expected; but it is disgraceful to discover it within the area of scientific research. Suppose no one to have innovated,—to have outraged public opinion as much as he has, where would we, as a people, now be? Look at our savages, and be reprovèd.

He is very much of the opinion that the investigations of his life have resulted in a very considerable addition to our present stock of physiological knowledge—(not learning, God forbid). If the doctrines he has taught in the following pages, particularly upon the subjects of the human temperaments and organic constitution of disease, shall be sustained by a rigid comparison of them with nature, then the result can not be less than a complete revolution in the sciences of pathology, diagnosis, and prognosis. And, inasmuch as these subjects have been rendered demonstrable even by his pupils, he can not entertain a reasonable doubt about their final reception.

He does not doubt but that he has taught some hitherto unknown truths, and he is willing to admit it as possible that he may have taught as many hitherto unknown errors; and, although the two classes may be equal, in both number and magnitude, yet there will still be a positive gain to the profession; because the cupel of time will absorb the latter, while the former will continue to requite, to some extent, the heavy obligation he is under, not to a part or sect, but to the whole of it—as he acknowledges but one Medical profession.

COVINGTON, KY., *June*, 1853.

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B O O K I I I .

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BOOK I.

PHYSIOLOGICAL CONSIDERATIONS IN RELATION TO
PARENTS AND THE TREATMENT OF CHILDREN.

INTRODUCTION.

WHEN we contemplate the inferior departments of animated nature, we cannot rationally conclude that disease and premature death were ever intended to constitute, necessarily, a part of God's physical providence, with reference to man. Sickness and premature death are much more common to man than to his inferior domestic animals; and more common to them than to the wild and undomesticated. They are also more common to man in his civilized than in his savage state.

These sentiments being admitted as facts, the conclusion seems to follow, that those conditions which are indispensable to health and longevity are more frequently violated by the former than the latter. Civilization creates motives which are very frequently stronger than his unperverted instincts, and his domestic animals are rendered highly artificial by the restraints he has imposed upon them. But in the wild state, both men and animals live in greater conformity with their inherent appetites and instincts.

Sickness and premature death may then, in civilized society, be far more properly attributed to his sins, or infractions of the laws which his Creator impressed upon him, than to him—his agency, or his providence, as they too frequently are.

Disobedience to the laws of his organic nature, may be said to have commenced with the dawn of his existence, and an enlarged edition of it with that of his civilization, and the inequilibrium it produced in his organization, rendered it incapable of repelling many of the various causes of disease. This inequilibrium has so multiplied, if not increased, that it may be safely asserted, at this time, that not the half of one per centum of children, now born, possess an organization in such equilibrium with the climate and the existing modes of

living, as to be exempt from frequent disease and death before the attainment of threescore years.

In view, then, of this existing state of society, it becomes proper, in a work professedly treating of the Diseases of Children, that we should first treat of those who are, or rather who should become parents; because a very large proportion of the diseases, not only of children, but of adults, have their remote causes in them. So true is this, that it would be just as rational to look for pippin apples on crab-trees, as happily constituted children from unhappily constituted parents.

The vegetable kingdom furnishes, analogically, a satisfactory illustration of the truth of this doctrine and the importance of the attention we are about to bestow upon it. It is now well known to horticulturists that so much depends upon the perfection or stamina of vegetable seeds, that while some produce vigorous and healthy plants, others cannot sustain their existence to maturity—some dying very young—having, nevertheless, equal advantages of soil and season.

In human society, it may be safely assumed that one-fourth of the annual mortality consists of children under one year of age; that about one-half consists of children under five years of age; that three-fourths consist of those under forty-five years of age; six-eighths under sixty; seven-eighths under eighty, and a few live to be one hundred and upward: and this difference of longevity, in the main, depends upon a corresponding one in the original constitution—in that vital force which the original germ received from the parent.

In our frequent travels on the Mississippi river, we have occasionally witnessed, in the young cottonwood forests, a beautiful exemplification of this principle in the aggregate of human life. The spring deposits of alluvial mud, throw up a dense forest of young cottonwood plants—during the first season one-half of them die; during the next season one-fourth of the remainder; and thus the reduction goes on, until but few, perhaps a dozen, are to be seen, where there were millions in the beginning. A wise provision!—those of unsound seed are not permitted to live to bear seed; and so it is in human society. This Book is, therefore, devoted to the improvement of the seed and the culture of the plants.

CHAPTER I.

PARENTAL CONDITIONS CONSIDERED WITH REFERENCE TO CHILDREN.

INTRODUCTION.

IN the condition of parents, and the manner in which they respectively discharge their functions, exists the health and the happiness, or the disease and the misery, of individuals and society, in a higher degree, than upon any other two circumstances connected with human existence.

The very idea of sex is pregnant with that of progeny, and in the union of the sexes, or marriage, is founded the provision for the perpetuity of the species; and for the security of this provision, it was placed under the government of laws, without which the animal world would have exhibited as great a confusion—as complete a chaos, as a mere mechanical aggregation. No particular type of body or mind could have been secured to progeny—every variety of monstrosity would have prevailed—there could have been no division of the animal world into classes, orders, genera, and species, but an inconceivable commingling of the whole.

By these laws, then, when strictly obeyed, parents have secured to them, their own vital stamina, their own virtues and talents, and also their own infirmities, vices, and crimes, or rather, inherent proclivities to them. By these laws, parents may hope to the full extent of their obedience to them, but no further. They must never expect to find in their children amiable dispositions and sound constitutions, when they themselves have not got them—children cannot inherit that which the parents have not, and they must and will inherit that which they have, be it good or bad. No man of common sense and observation expects to produce on thorn-bushes, fine

apples—each tree may produce its own kind, in both size and quality, and human parents can do nothing better.

What a motive do these laws present to a reflecting and ambitious mind! What must be the depth of the degradation of that parent whose soul would not be frozen with the thought of bringing into existence a progeny to suffer from the frowns and restraints of civil authority, to live in constant and conscious degradation—to be a practical curse to their race, and multiplying, in every generation, to the end of time, without some fortunate event should occur to turn the tide of such a deepening, widening, and blackening scroll upon the face of time!

How ignorant of, or indifferent to, the certainty and immutability of these laws must existing society be, if we may judge from the incompatible alliances and the violations of domestic and social duties which are perpetrated every day, and almost in every walk of life!

Do we not see men and women hazarding the consequences of an alliance with consumption, scrofula, cancer, intemperance, insanity, epilepsy, their own cousins, and incompatible constitutions? Can they have an abiding faith in the integrity of God's ordinances? We see, furthermore, scolding, brawling, and fighting within the domestic precincts of the bed-curtains—the sanctuary of the procreating genius. Is not such conduct a wicked braving of the ordinances of heaven? Can they expect that such uncompanionable dispositions will not be entailed upon the fruits of their intercourse—do they never reflect that they are laying a foundation for their own degradation, through the crime of manslaughter in their children?

If we turn our attention to even the most intelligent portions of society, we shall find inconsistencies of a more glaring and mischievous character, than those we have been exposing. We find both men and women who are socially and perhaps morally unexceptionable—such as are very particular in doing right, and to the best and most useful end, all that they do. Should we not look to such people for good, happy and useful children? But are we not sometimes greatly disappointed? When they desired progeny to smile upon them in their old age, and to ornament and prosper society,

did they observe the same care that they manifested in their other concerns? Did they pause to consider whether their own bodies and minds were in a proper physiological state to justify so responsible a function? Was he in good health—was his mind relieved upon every other subject? Was her mind and body in a similar condition? If all this were so, look back, in due time, and the result will occasion no regret. But if conditions of a contrary character obtained, shed a tear of pity for the result, and another of contrition for the imprudence. Blame not the author of the laws—he has only promised success for obedience.

The great end and aim of marriage was progeny, and consequently, we do not expect any very signal improvement in society until the organic laws that govern the marriage function shall be better and generally understood, and as generally obeyed.

SECTION I.

MARRIAGE ELIGIBILITY.

Much has been said about the periods for the consummation of marriage by the two sexes respectively; and yet considerable contrariety of opinion prevails. The ancient Germans did not allow their young men to marry before they were twenty-four or five years of age; and in Wirtemberg, at this time, it is illegal for a man to marry before he is twenty-five, or a young woman before she is eighteen. This statute is, in every instance, an outrage upon organic law, but probably not upon that condition of society which has resulted from the artificial influences of an imperfect civilization.

Professor Dewees fixes the time of marriage for the male at a little over twenty-three years of age, and the female at a little over nineteen, in this country. But he teaches, "that no precise or absolute rules, based upon the lapse of years, can be laid down; since the body of both male and female may be precociously expanded, or may be unusually and morbidly retarded. In the first instance, the period we have assigned may be anticipated with safety; but in the second, it would be wise to extend it. Thus, oftentimes in India, females

become mothers at ten; while in Lapland they rarely give evidence of womanhood until eighteen; consequently, the women of India would be on the wane, did they wait for the limit at which it would be proper for a Lapland woman to marry: and the Lapland woman could not support the contingencies of marriage, did she attempt to regulate it by the usage of India."

Dr. Dewees is the advocate of early marriages, *cæteris paribus*, nevertheless, he attributes to them evils, which we think should be referred to other and very different causes; such as "diminished vigor and shortened life of the male; faded beauty, blasted health, and premature old age of the female;" with an entail upon the progeny of "diminutive stature, debility of body, imbecility of mind, and a predisposition to consumption, rickets, scrofula," etc.

"It has frequently excited the surprise," he observes, "as well as provoked the reproach of foreigners, that the females of this country lose their beauty so early, especially when compared with the females of Europe, and particularly those of Great Britain. The cause of this hasty decay must be principally sought for in our very early or premature marriages; but we confess that climate has also a certain, though more limited, agency."

Upon this subject, it really appears, that there has been a very general want of accurate observation and philosophical discrimination;—to attribute an early loss of either beauty or health to early marriages, is, in our opinion, equivalent to charging our Creator with unwise provisions—to referring our misfortunes to him—to his "mysterious providence," instead of our disregard and disobedience of his institutions.

It has now become a well ascertained fact, that our capacities are not simultaneously, but successively developed; the first faculties manifested by children are those which preside over physical development, and those that take cognizance of surrounding objects; then come those animal ones which preside over our relations, both affectively and intellectually; then our moral and reflecting; then those which are usually denominated the religious; and lastly, the sexual, or those which preside over the perpetuation of the species.

It would now be exceedingly unreasonable to conclude that

it was the intention of our Creator that either of these classes of powers should be developed, before their functions should be manifested. In such a design there would be no utility, hence no wisdom. We allude to what appears to be the law of the race, and not to exceptions, or instances of precocity, and therefore of morbid or abnormal development.

With the undomesticated animals we find uniformity and harmony in the manifestation of their functions—as soon as the sexual capacities of the females are developed we find them to be successfully manifested, and that too without any stinting of the species.

The same is true of all people whose mode of existence is primitive. Even twenty years since it was particularly the case with our Creek Indians, and yet the men were not diminished in either size or vigor, nor were the females faded in beauty, blighted in health, or visited with premature old age ; nor did they entail upon their progeny a predisposition to consumption, rickets, or scrofula. What is true, therefore, of one people may be true of all others, under similar circumstances.

Dr. Dewees regards marriage with females, at a little over nineteen, as being early—it is the period at about which the female body receives its final “expansion.” Now, inasmuch as her sexual capacities are developed from three to five years earlier than this, we should, with as much justice and propriety, assert that the manifestations of her intellectual, moral, and religious capacities should neither be trusted nor tolerated until about the same period of life, or until the body receives its final “expansion.”

Philosophically considered, there is just as much propriety in the one position as the other, because it is not to be supposed that the Creator would implant in her mind a desire, and in her system a capacity to conceive, without the ability to execute, in good faith, the function. We cannot, therefore, attribute the early decay of beauty in the American women, as compared with the English, to premature marriages—we deny that they do, in the abstract, take place prematurely, so far as age and the development of the sexual system are concerned. Nor are we disposed to attribute our troubles upon

this subject to any peculiarity of our climate, but to our artificial modes of existence.

Our own observations have confirmed the truth of those expressed by foreigners ; and to show that the evil is not attributable to premature marriages, we have but to compare our single women, over the age of twenty-five, with those of England. These appear vigorous, youthful, and healthy, while those are as generally lean, pale, wrinkled, and prematurely old in appearance. In American society, single women, at the age of twenty, or thirty, are, in point of beauty and healthy appearance, inferior to the married women or mothers of the same age.

We must, then, attribute the premature decay of our women, so far as the fact may exist, to some other cause than premature marriage.

English women, as well as men, can, and always do, find time to eat, to laugh, to rise early, to be cheerful, and to take exercise in the open air, while the American women, we include to the young ones, have no time for early rising, no appetite when they have risen, no time to be cheerful, except in spasms, or upon exciting occasions, and no time to take exercise in the open air. English women delight in walking four, five, or six miles at a time ; but American women fancy that such walks would kill them. English women aim at red cheeks and well-turned limbs ; American women aim at shriveled limbs and blanched faces. The consequences are that the English women, whether married or single, maintain a healthy appearance, while those of America, in either condition, soon arrive at premature old age. Marriage, with such American women is premature, no matter at what age it takes place.

These remarks, of course, apply mostly to our city society, but not entirely. If our readers will compare the neck and thorax of our English women with those of American women, especially as we find them, very generally in our cities, and then appeal to our expositions of the cerebellar functions for an explanation of the difference, then they will discover that early marriages have not done the mischief complained of.

We have never known an American woman to marry too

young, but we know very many who should not have married at all. As there is but little, if any, tendency in females to marry before the development of the sexual system has caused them to desire to do so, there is as little danger of their marrying too young. The question then, should be one of health, of constitutional stamina—and not one of age. The natural laws command early marriage, with sound and healthy individuals, and no marriage at all with those of a contrary character; and such is our faith in the wisdom of these laws that we urge obedience to them.

We have not made observations upon society in Europe, nor in the eastern portion of the United States, but we have in the western, and hesitate not to affirm that the first children of early marriages are as sound and as intellectual as those of riper years. The difference which we have observed appears to be in their favor—they are more impulsive, sprightly, and enterprising, and to us the reason is obvious: they were conceived or produced under the prevalence of the greatest activity of the physical and mental faculties—when the parents felt themselves to be bound together by no other bond than that of love, and at the period, too, of their greatest and most expanding hopes.

As physiologists we should not look to old and densely populated countries for normal manifestations of human nature. There, poverty and position, on the one hand, do not engender the inspiring influence of hope—the mill-boy there, only makes a mill-man, and not the owner of land or the governor of a country; and on the other, among the affluent, marriage is too much a matter of commerce, to produce, generally, enterprising genius. But in this country, hitherto, society has been as free as the undomesticated animals of the forest, and hence all the human functions have been manifested in the order and at the time intended—no complaints have been heard about the misfortunes of early marriages.

This appearance of premature decay that has been spoken of, as being peculiar to this country, is not confined to the females—the males are also marked with it to a very considerable extent. For this fact, as it applies to both sexes, there is another cause far more fruitful in mischief than early marriages have been.

In England, Ireland, and we believe in Scotland also, it is, in good families, the practice to set a separate table for the children, which is provided with such food as is thought to be the best for them—such as is simple and of easy digestion. In this way they are removed from the temptations of the adult table, which is adapted to adult constitutions. This practice, modified more or less by the circumstances of families, is no doubt practiced by all classes of society.

How stands the case in this country? As soon as they can sit, and even before, they are taken to, and fed from, the adult table, and fed with such food as it may contain—with the remark, “if the poor child cannot have substantial food it will not become strong.” In this practice, through gastric derangements, we can certainly discover the premature loss of teeth, and with them departs the rose of health and the bloom of beauty.

SECTION II.

PARENTAL CONSTITUTION.

It is a very prevalent opinion among the unprofessional that those persons who are the most fresh and rotund in appearance possess the best constitution. As these appearances very frequently depend upon plethora, we have the reason why so large a proportion of fine, healthy-looking persons die during the prevalence of severe epidemics. Women with such constitutions, though well and healthy looking, have usually but few children, and they are of an inferior quality.

On the other hand, very many feeble and infirm women have many fresh and rosy-looking children, but their appearance is deceptive—their condition is one of obesity—a constitutional weakness of the vital forces, which has been entailed upon them.

The rich, or those who live high, are too plethoric to be fruitful, and hence such people have usually few children. The poorer classes, or those who have enough, such as it is, consisting mostly of vegetables, are much more prolific, and the children have the best promise of health and longevity. But the most prolific women, for the time being, are those who

are laboring under some slow, chronic, but certainly fatal, disease, as consumption. This appears to be a law of the vegetable and animal kingdoms, that in proportion to the danger of the species becoming extinct, so far as the individuals are concerned, is the increase of fecundity. Fruit trees, so battered and bruised that they must die in a year or two, are certain to have a full crop of fruit the year before they die.

Women thus circumstanced should not marry, and if, after marriage, they should become so, they should cease to become mothers.

The amount of disease and premature death that is entailed upon society by the marriage of unhealthy persons, is such as to demand, on the part of society, the enactment of some protective ordinance. If the consequences were confined to the parties themselves, or even to their children, the evil would be comparatively small; but the multiplication of it is so rapid, that, in a few generations, a very large extent of country becomes similarly afflicted. Because a man or woman has acquired a predisposition to consumption or some other form of disease, it does not follow that the privilege should exist to entail it upon others.

There is scarcely an individual in society who has not witnessed the deplorable consequences of the marriage of those who have had entailed upon them a predisposition to consumption, to insanity, to apoplexy, etc.; then what should we think of those who, knowing themselves, by what they know of their ancestors, to exist with such predispositions, place themselves in such a situation as to visit the mischief upon unborn hundreds, perhaps, thousands? We must conclude that they have never seriously thought upon the subject, or else, that they are superlatively selfish or inexcusably dishonest.

There has become, broad-cast, in our country, a predisposition more mischievous than consumption, insanity, or any other form of disease that now occurs to us, though not so certainly and speedily fatal—it is intemperance in the use of ardent spirits. A drunkard is almost sure to be the grandfather of drunkards, through the female part of his children, and it is probable, that he may also be the father of them.

A practical phrenologist rarely fails to detect this predispo-

sition. Indeed, it may be truly said, that all predispositions to disease, as well as to crime or moral depravity, are advertised upon the outside of the head.

All predispositions may be removed by appropriate physical and mental education, and by judicious marriage alliances; but who is to direct these? All that we can do is to announce their existence, and to admonish all young people against forming an alliance with them.

There is yet another predisposition, which has hitherto, so far as we know, entirely escaped the notice of physiologists, and yet it is one which every person should avoid, in a marriage alliance, and every one would avoid it, who entertains ambitious hopes of his children, if they knew it. We allude to those women who very closely resemble their mothers, and in consequence of this entail upon them, they will entail their own likeness and constitution upon their daughters, and those of their husbands upon their sons. Such children never equal their parents, respectively—the fact indicates that the work of degeneracy is in progress, and if continued will result in physical infirmity and mental imbecility. To this law there is possibly an exception in the sanguine temperament.

The Arabians seem to have understood this long since—they maintain that the blood in any species of animals is transmitted through the female; hence they will cheerfully sell their stallions to foreigners, but not their mares.

As a very general law with all classes and species of animals, man included, males inherit through the mother, and females through the father. Daughters, though inheriting the mental peculiarities of a father may never manifest them, because of their more restrained position in society, but her sons will. The character of the sons may be inferred from that of the maternal grandfather.

These rules are always applicable, except when the elements of both parents are blended in the children, which is frequently the case. The physician who fails to teach these facts to the public, on whom he exercises a professional influence, does not discharge his duty.

SECTION III.

IMPROPER MARRIAGES.

It is universally admitted, but not always avoided, that consanguineous marriages are gross violations of the laws of procreation. Physical deformity or mental inferiority is certain to appear in some of the descendants of such alliances. The unfortunate consequences of such marriages upon society are so notorious, and have been for centuries, that it is a matter of surprise that penal statutes have not been enacted against them, by all civilized countries. Conventional statutes are enacted to enforce obedience to very many of the organic laws which are very far inferior to this, in their importance, or in the consequences of their violation. Organic law has as positively prohibited marriage alliances between blood relations, as it has murder, theft, and falsehood; and the individual who contracts such an alliance, knowingly, is just as guilty of crime—of an outrage upon society—of disobedience to his Creator, as if he had stolen his neighbor's horse.

As an illustration of the magnitude of this increasing evil, in some of the old states, we extract the following history of one family from the Fredericksburg "News:"

"In the county," says the editor, "in which we were raised, for twenty generations back, a certain family of wealth and respectability have intermarried, until there cannot be found in three of them a sound man or woman. One has sore eyes, another scrofula, a third is idiotic, a fourth blind, a fifth bandy-legged, a sixth with a head about the size of a tin-cup, with not one out of the number exempt from some physical or mental defects of some kind. Yet this family perseveres to intermarry with each other, with those living monuments of their folly constantly before them."

Who can say that, ultimately, this family connection will not become a heavy expense to the state? When they shall so degenerate that they cannot take care of their property, then the state will have to provide for them. It is even now a question whether one-half of the adult males are fit for military duty; and when a people become too degenerate to defend themselves, what are they but Hindoos—unfit for

anything but the most stupid and degrading idolatry. In the very face of this enervating and dehumanizing practice, legislators look on, with their arms folded, and say, "well—this is none of our business—our country is free, and they have a right to marry whom they please." This false notion of liberty, unfortunately, exists in every part of our country; when in truth, no one ever had a right to do wrong.

There is another alliance that frequently happens, which, if possible, is more objectionable than the consanguineous, so far as regards the immediate progeny, but not so far as concerns society at large; and for the reason that they do not live to propagate. We allude to the union of individuals of the same temperament or constitution. We are now acquainted with intellectual, energetic, and healthy parents whose children are all dead, or else possess so little stamina that they will not reach maturity. This law obtains with all the temperaments, except the sanguine, but more particularly with the triple and quadruple combinations. So marked are the consequences of these marriages, that it may be regarded as a matter of much surprise that it should, up to this time, have entirely escaped the notice of physiologists.

Such parents, having fine health, deem the cause of the early loss of their children, as entirely inscrutable. They never imagine that they have violated an ordinance of their Maker, and that in the loss of their children they are suffering the consequent penalties.

In consideration of the existence of this law, let all persons be admonished to avoid a marriage alliance with those who have their own complexion and habit of person.

This topic is too important and too little understood to be passed over with a mere mention of it; and therefore we will illustrate it by the introduction of two cases out of the many we have.

In Mississippi, we boarded two or three weeks with a very excellent man of the sanguine bilious lymphatic constitution. He was large, and had a large and finely-proportioned head—in fact, he was an excellent specimen of this constitution. His wife was large, and as fine a specimen of the same constitution as he was. The cerebellar and coronal portions of both their heads were fully developed.

At this time we had not discovered this law, and from the healthy and fine appearance of the parents, we expected to see fine children. Now, imagine, if possible, our disappointment! They had six children, and a description of one will answer for all of them. The head was large but the cerebellum was exceedingly small, and, consequently, so were the neck and chest, and, indeed, every other part of the body. The parents had beautifully rounded and elevated coronæ to their heads, and therefore capable of all the more elevated feelings of our nature; but the head of each child was very nearly as flat as the table on which we write. They were all highly encephalic, with the exception of the superior portions of the hemispheres, which were too flat and defective, to constitute normal specimens of it. The complexion of all of them indicated great feebleness of the respiratory and circulatory functions. It is not our opinion that either of them could have lived to the age of ten years; but we do not know what has been their fate.

Upon a recurrence to the facts in this case, we shall find that the mischief was two fold. First—Both parents had the vital forces large—the children had them too feeble to sustain them to maturity. Second—Both parents had large religious and moral organs—all the children were as defective in these as in the vital forces. The children, then, of this marriage suffered, immediately, both vitally and mentally.

Now, we think it very probable that our readers are as much puzzled as we were, to comprehend the intention of the law that governed in this case; but do not doubt the wisdom of it—all of God's laws—the natural laws, are pregnant with wisdom and the good of the human race. We were six or seven years laboring to discover its intention, but in the meantime we discovered many similar cases—enough to convince us that the law of procreation governs in the premises.

We will disclose it. Suppose the children had inherited from their parents the combined strength of their vital forces, would not the consequences have been monstrous? Suppose, again, that they had inherited the combined strength of the moral and religious faculties of the parents, and they should, in turn, obtain wives like themselves, and that their children again should do the same, does it not become obvious that

the most lamentable monstrosity of mind would be the result?

Now, what is the law which was violated by this gentleman and his wife? It was this:—The husband and the wife must be the compliment of each other. They were not, but were like each other. If the moral and religious faculties had been the compliment of each other, then the children would only have suffered in their vital systems—reverse the case, and then they would only have suffered in having very feeble emotions of morality and religion. When, therefore, this law is violated, the extent of the consequence will depend upon the character of the violation. If it be in relation to the vital forces, then the law cuts off from life, the acquisition of the outrage, which is the child.

Can any one reflect upon this law without being forcibly penetrated with the wisdom and philanthropy of it? In the criminal walks of life, the mischief-doing propensities are strong; now, suppose that this law did not exist, how frequently would children inherit the combined strength of them in both parents? And suppose they did; what would be the extent of the theft, burglary, robbery, piracy, murder, and arson, inflicted upon society?

One morning, a large, fine-looking, sanguine bilious lymphatic gentleman, who had heard us the night before upon this subject, called upon us, and commenced thus: "My wife, sir, was in many respects like myself; her hair, eyes, skin, and general make of person were like mine; her head differed from mine about the front, it was not so wide, particularly about the top, but her neck and the back part of her head were like mine: now, what would be the character of our children?"

We answered: "In the first place, it is possible that you had none; but if you had, it is very probable that you did not preserve one to maturity." He replied: "We had six, and all died before they reached their tenth year; and I never had any idea of the cause until I heard your lecture last night, for both of us were healthy, and we lived on a healthy place, and our young negroes have all done well, which seems to show that there was no cause for such a fatality, except the one you have given. Finally, the mother of these children died, and

I married a lean, dark-skinned woman, and we have now three promising children."

The marriage of old men with young women is not an uncommon occurrence—too common, indeed, for the happiness of the parties or the political good of society. Although more males than females are born, yet, in consequence of the greater exposure of the former, the latter prevail in all old communities, which is comparatively a social or political evil; and as it is usually increased by such marriages, they are objectionable. When such marriages produce sons, they are usually of an inferior quality.

It is contended by some that it is better, on all accounts, for a young woman to marry a sound, and, in other respects, unobjectionable old man, than an unsound and debauched young one. We admit this, but contend that it would be better for her and for society, as a general rule, to avoid both.

Professor Caldwell says, and Mr. Combe has indorsed it, that "old men should in no case contract marriages likely to prove fruitful. Age has impaired their constitutional qualities, which descending to their offspring, the practice tends to deteriorate our race. It is rare for descendants of men far advanced in years to be distinguished for high qualities of either body or mind."

In this quotation there are two errors—one of principle and one of fact; and we are surprised that either of these distinguished gentlemen should have committed them. Our Creator, in fixing the constitution of the female, so arranged it that she *should not* have children when she became too old to entail upon them vigor both of body and mind; and no reasonable man can doubt that he would have similarly constituted the male, if, in his arrangements, there had existed the same necessity for it. To allow to man the power of performing a function, in connection with a strong desire to do it, and yet deny to him the privilege of doing it, would be just cause for the impeachment of his wisdom.

Young women have as fine and as vigorous daughters by old men, as they could have had by any other class of men. By such husbands they were never intended to have sons, and when they do, it is in consequence of some fault in their own constitution. The sons of such marriages should have been

daughters, and in being daughters, they should not have been at all. It is true, that old men but rarely, or never, have distinguished sons, but they have what is more valuable, daughters who may become distinguished through their sons.

There is yet another and frequent alliance, particularly in our cities, which is still more incompatible than either of the preceding, because it is very generally attended with the premature death of one of the parties, with the nonproduction of issue, or, if produced, they possess a feeble constitution and but rarely fail to meet an early grave. We allude to an extreme difference in the strength of the sexual desires of the parties. The man or woman who possesses an extraordinary strength in this respect, is a monster—as much so as the other extreme. Both extremes are fruitless. Judicious and well-informed parents would sooner yield their daughter, who has a delicate person with an extremely small neck, to an executioner, than in marriage to a man who is firm in muscle, and withal has a neck enormously developed in a backward direction. She will not only prove barren, but by worse than any known brutality, be forced into a premature grave. A lady in Maryland, some years since, obtained a divorce from her husband, on this ground, and never was there a divorce more justly granted.

There are many incompatibilities of less magnitude, which however, produce much mischief in society. One of them is an incompatibility of temper or disposition. If the injury did not extend beyond the parties themselves, and cast its shadow far in the future, we might excuse legislators and judicial tribunals for refusing to grant divorces upon such a plea. But when we contemplate the fact that unhappy parents can produce neither healthy nor happily constituted children, the apparently small and insignificant incompatibility becomes one of enormous dimensions. Leaving out of the account petulance and capriciousness of temper, if we could furnish the statistics of manslaughter and suicide which have resulted from this incompatibility of temper between parents, it would be contemplated by the popular mind with wonder and astonishment.

Powerful illustrations of the truth of these remarks are frequently to be met with in the cotton and sugar planting

districts of our country. The negro children on those plantations which are governed by kind and discreet overseers, are playful, healthy, buoyant, and cheerful; while those whose parents are under the government of heartless task-masters, appear to be sour and careworn—taciturn and unhappy—so destitute of both physical and mental energy, as to become the legitimate food of the first epidemic that visits that quarter.

Could any better fruit than this be expected of a mother who receives a cowhiding in the morning, sees her children whipped through the day, and her husband at night? Parents, then, who cannot live in peace and happiness with each other, should, for the good of society, separate; and as the well-being of society is paramount to every other consideration, no obstacles should be interposed to prevent those from separating who do not desire to live together. Our divorce laws are doomed to undergo a total change when the constitution of the human mind and the influence which parental discord has upon the health, happiness, and usefulness of progeny shall become to be properly understood.

SECTION IV.

PRESENT HEALTH AND QUALIFICATIONS.

By present health, the condition of the parents at the time of marriage, is to be understood. It might, *a priori*, be reasonably concluded that no one would venture or presume to contract a marriage alliance under any variety of permanent or greatly incurable disease; such as either gout, cancer, apoplexy, scrofula, consumption, occasional insanity, or secondary syphilis; but such is the state of human depravity, that through selfishness, recklessness, or thoughtlessness, the utmost care is sometimes practiced to conceal the presence of existing disease.

We have not yet presented the most depraved view of the picture. Marriage is frequently contracted when the existence of such disease, in one of the parties, is known to the other. This may sometimes happen through an ignorance of

the laws of hereditary descent, but it most generally does happen through a highly culpable and equally degrading sacrifice of the prospective health and happiness of progeny at the shrine of fortune and influence.

We had, a few days since, from a very intelligent lady, the history of a case that is worth relating, and one that came under her own knowledge.

An Irish lady was addressed by an officer of the British army—she declined his suit on the ground that she possessed a scrofulous constitution. He assured her that this should be with him no objection ; but she persisted in refusing to become the wife of any one, for the reason before assigned. At length he informed her that his condition was that of hers, and convinced her that such was the fact, by showing her the unmistakable evidence that he had, at an antecedent period, been intimately acquainted with the “King’s evil.” At length she consented to have him—they were married—had many children, and all of them died at an early period, after much scrofulous suffering.

As hereditary diseases are held in more abhorrence in Europe than they are here, the consequences of such an alliance were well known to them. Knowing the complying character of woman, when she loves, we can excuse her, but what must we think of him ?—a man, too, capable of defending his country in an official capacity.

There is yet another condition which is entirely incompatible with marriage, and we introduce it because there are very few young physicians who know anything about it; indeed, there are but few of any age, who have had experience on the subject.

A medical gentleman, who had had an extensive practice in the city of New York, and with this general practice he had much of that which is known as “private diseases.” He assured us that he was never able to cure a child (under the age of one year) of a man who had practiced, to much extent, self-pollution. He, of course, associated the previous practice of the sire with the fate of the child, in the relation of cause and effect ; but this may not be correct, or it may be only in part so.

Let it be remembered, and we think that we have probably

made the remark somewhere else, that those who are organically disposed or forced to self-pollution, have generally that division of the vital forces which was intended for the perpetuation of the species, in high endowment, while those upon which their own existence depended, are generally very feeble. Cases might be cited in illustration of this condition. The unviable condition of the children, may depend upon the feeble endowments of the father, or upon his abuse of them, or upon both.

In our large cities, men are probably more guilty of fornication, and women of masturbation, but both injure the constitution and defeat the expectations of marriage.

But, beside the existence of either of the diseases above-named, or even a predisposition to either of them, there are moral manifestations of morbid action which should as certainly be a bar to marriage—such as gambling, the tippling use of ardent spirits, and dissipation in general. They are very nearly as incurable as consumption and are as transmissible.

In both sexes there sometimes exists physical disqualifications for the principal function or object of marriage. It is truly astonishing that either sex would enter into such an alliance, under such circumstances, when the merest common-sense cannot avoid assuring them that if made, it will and should be broken.

Early in our professional life, a gentleman of polite and liberal acquirements, a few days before the appointed time of his marriage, called upon us and submitted his sexual apparatus to our inspection, for a professional opinion. The testes were contained in two separate and independent sacks, and the urethra terminated, anteriorly, between them. The original track of the urethra was a hardened cicatrix, which, acting as an unyielding cord, drew the penis into a little more than a semicircle when erected. As might rationally be supposed, we advised him to abandon forever all idea of placing himself in the position of a husband, and he agreed to break up the marriage agreement he had contracted ; but, nevertheless, in three days he complied with his engagement to the lady, and in a few weeks after she left him. From a gentleman of engaging and courtly manners and enterprising habits,

he became, from this event, a bloated sot, and died most disgustingly scabious.

Beside an equal disability on the part of females, there are other conditions which should sometimes cause them to prefer celibacy to the hazards of matrimony. Women much advanced beyond the usual period of matrimony, of a dry, dense, and fibrous system, can but rarely become a mother without the cost of her life—her parturient apparatus absolutely refuses to perform the function for which it was intended.

On the other hand, there are many young women of stunted development and feeble stamina, with whom every particle of life is expended upon the parturient function, and even then a failure not unfrequently results. The cost, then, of becoming a mother, a probable event, should be well calculated by these two classes of women before venturing to become wives.

Professor Dewees, speaking of the parturient difficulties that attend early marriages, asks the question, "Do not these facts emphatically declare there is a time best for marriage? This time we shall fix at nineteen for the earliest, and thirty for the latest periods."

Every girl, who feels that she has arrived at womanhood, will be facetiously disposed to inquire what right he had to fix the age at which she should marry, when her Creator had fixed it at a much earlier period?

We cannot make war upon nature's institutions, but we do upon the violations of them. The proper question for girls and parents to consider is fitness, for the functions of a mother.*

* We are, upon this subject, much disposed to agree with an aged and reverend gentleman whom we knew in Pennsylvania. When called upon to consummate a marriage, his daughter would say, "Why, pa, she is too young;" then he inquired, "Is she large enough?" and upon being informed that she was, he would remark, "Then she is old enough." Upon other occasions, she would say to him that the bride was too small, and then he inquired if she was old enough, and upon receiving an affirmative answer, he would remark, "Then, she is large enough." This is our opinion, presupposing that the organic laws, which govern in the premises, have been obeyed by her ancestors and by herself.

CHAPTER II.

INFLUENCE OF MATERNAL CONDITIONS ON THE FETUS.

INTRODUCTION.

If it be true that the impressions made upon the maternal mind or body can affect the fetus, the fact should be placed beyond controversy, because, such is our faith in the wisdom of all the natural laws, that their discovery and establishment must contribute to the improvement of the human race; for if such a possibility exists, it is to the advantage of the species, while the injurious consequences fall only upon individuals.

If such a possibility exists, it can be the recipient of favorable impressions, as well as those of a contrary character. It is, therefore, all important to settle the question, as one of fact, because women, in general, seem not to know or believe that any impression can influence their offspring, except one of fear or apprehension. This general conviction should be eradicated, and the profession should be active in trying to effect it.

Such is our conviction of the affirmative of this question, and such our estimate of the value of truth, that we beg our readers to excuse us, in the event that we shall prosecute the subject to an extent beyond what they may deem necessary.

The question is one of inference from facts, and to acknowledge it as such, displays no exercise of credulity, it is a mere acknowledgment of coincidence, and upon the same kind of evidence that we admit the conclusion that the brain is the instrument of the mental functions; and the phenomena are as explicable in the one case as in the other.

SECTION I.

PSYCHOLOGICAL INFLUENCE OF THE MOTHER ON THE FETUS.

The opinion that impressions made upon the mother's mind may, and very frequently do, affect the fetus, is regarded by some as being, in point of fact, true; and by others as false and delusive. The former, under the conviction that all truth should be known and defended, do not hesitate to avow their convictions; while the latter, no doubt from equally honest motives, deprecate the doctrine as being greatly mischievous in its influence upon the female mind. One thing is certain, that so far as we know to the contrary, it is as old as the human race, and almost universally believed by all nations, both civil and savage.

It has been our lot to become convinced, that however much we may decry the philosophy of the ancients, we are bound to respect their observations. They did not possess our advantages to become learned, and, consequently, having to rely almost exclusively upon themselves, their observations were directed with more careful attention; and to be correctly informed that Galen and Hippocrates maintained the opinion, as one of fact, is sufficient to secure our respect for it.

Those who contend for the negative, refer us to the existing anatomical relations between the mother and her fetus. They assure us that the connection between them is entirely through the circulation—that no nervous communication has ever been detected—that there is no direct communication of any kind; and hence, they conclude that it is impossible that any arterial or nervous condition of the mother can affect or influence those systems of the fetus.

It appears to us that the man who can, on this account, reject the doctrine, and all the facts that sustain it, is capable of rejecting a fact because he cannot explain it. Our knowledge of human dynamics would be reduced to a very small compass if we were to reject everything for which the anatomist has not detected an appropriate apparatus. Upon this principle we might deny that the brain is the apparatus of thought and feeling—that there is any difference between the

nerves of motion and sensation, and reject the whole doctrine, that the agency of the male is requisite in the work of procreation.

Notwithstanding the almost independent existence of the mother and fetus from each other, it is admitted on all hands, even by those who deny the doctrine under consideration, that the existence of the fetus produces nausea and vomiting in the mother—that it produces a “longing” or desire for unusual, and frequently, for the most filthy species of food, as putrid fish and “bacon skin from a soap kettle.” If the connection between the mother and fetus is so indirect and insignificant, that impressions upon the former cannot affect the latter, how does it happen that the latter can so powerfully affect the former? In all other known instances a rule will work both ways.

Dr. Dewees, who repels the doctrine, says, “Nothing contributes more certainly to the safety and future good health of the child, than cheerfulness of mind; or, at least, equanimity on the part of the mother: this fact was well known to the ancients; and they acted upon it accordingly, by giving great attention to the little wants of the pregnant women.” Again, he says, “It would appear that the woman has an important duty to perform, during the whole period of utero-gestation; that her offspring may not suffer, in either body or *mind* by her imprudence,” etc. Again, he continues, “She may entail [by neglect of duty] a frail constitution of body, or perpetual feebleness of *mind*, or even *fatuity* itself.”

Now, suppose a person, who is ignorant of the anatomical relations in question, to read these extracts, would he not conclude that the connection between the mother and her fetus was peculiarly direct and intimate?

Of all the tasks that men are called upon to perform, that of being consistent in the defense of error is the greatest—truth will occasionally peep through the fogs of error with the brightness of the sun’s rays through broken clouds. In our judgment, the confessions contained in the above extracts are fatal to his defense of the negative of the question under consideration.

We are not contending that hopes, fears, and frights produce all the calamities that are known to happen to fetuses,

any more than we contend that utero-gestation is the cause of all the nausea, vomitings, and longings of the mother; and when it is admitted that a fit of anger may produce abortion—that irritability and petulance of disposition may greatly injure the future health and mind of the child, the substance of the whole question is conceded.

There are other phenomena in the human economy much more obscurely connected with their cause, than the facts contended for in the premises. The connection of the semen masculinum, in the vagina, with the ovum is as obscure and indirect as that between the mother and fetus, and yet, through this double difficulty—this double obscurity, fathers entail their present and accidental condition upon their children. As an illustration of this truth, we cite one case, out of many which are at our command. Mr. George Combe (*Constitution of Man*) informs us, that “a man’s first child was of sound mind; afterward he had a fall from his horse, by which his head was much injured. His next two children proved to be idiots. After this he was trepanned, and had other children, and they turned out to be of sound mind.”

But even such cases as these do not prove or illustrate the entire strength of our position. It is now a well known fact, that both men and the males of the inferior animals transmit to their progeny their acquired habits and peculiarities. The English fox-hound was crossed with the Spanish pointer, and the progeny trained to stand at game, and after being thus trained, their puppies were seen, untrained, to stand at swallows and pigeons.

The whole subject of human impressibility is closely allied to the one under consideration; indeed, the latter is only a fragment of the former, and therefore illustrations of the one are equally applicable to the other.

Intellectual and educated men at the present day do not pretend to believe that amulets and other kindred means can exert an influence either in the cure or prevention of disease, or in anywise affect the human solids or fluids; and yet, they admit themselves to be greatly puzzled with the coincidences which they have been forced to observe between the assigned causes and certain obvious results.

An old gentleman, highly educated in some of the exact

sciences, very unimpressible and incredulous, was afflicted with rheumatism, and upon complaining of it in the presence of some gentlemen, one of them told him that if he would carry, in his pocket, constantly, a buckeye nut, he would not be afflicted with the disease any more, and as he concluded his prescription, he handed him one. He has carried the buckeye ever since, says that it is light and of no inconvenience to him—professes no faith in its influence—laughs at the idea, but admits that he has not been afflicted with the disease since.

The writer, while a student of medicine, had a large wart on his ring-finger, and shortly after he engaged in practice, a young lady asked him why he did not remove the “ugly wart” from his finger; he answered that he intended to do it when the weather became a little warmer. She then told him that if he would agree to cure her of the ague the next fall, she would remove his wart. He, of course, assented to it. She obtained a bit of chalk and rubbed the wart until it became white, and then made a mark on the back wall of the fireplace, remarking at the time, that when the mark became obliterated the wart would be gone. He laughed at this as a bit of girlish mischief, and thought no more of it at the time. Some two or three weeks subsequently, he was dressing his finger-nails, and happening, spontaneously, to cast his eyes upon the wart, he discovered, with considerable astonishment, that it was nearly gone; and in a few days more no trace of it was to be seen, nor has it ever reappeared.

A gentleman in Memphis, of a high order of intellect and respectable acquirements, but constitutionally very impressible, informed the writer that when he was a schoolboy, it was a prevailing opinion among the boys that if the water in which eggs have been boiled happen to get upon the human skin, it would produce a crop of warts; and, one morning when at breakfast, he offended his little sister, who, for revenge, threw some tea on his hand, telling him that it was egg-water. In a few days his hand was covered with small warts which grew to such a size as to render his hand a disgusting object. Subsequently a boy told him that if he would wash his hand in the first stump-water he found, they would all go away; and

he did so, and in a few days, comparatively, they were gone, and he had had none since.

A lady, in Cincinnati, the handsome widow of a late wealthy merchant, had a wart on her hand, and being in the store attending to some business, a country woman came in and observed the wart, and remarked, "You have an ugly wart on your hand." "Yes," answered the lady, "and I would give a good deal to have it off." "I will take it off for you," said the woman. "If you will," said the lady, "I will give you the handsomest silk dress in the store." The woman pricked the wart with a needle until it bled, she then stained a boss thread with the blood, inclosed it in some paper, and walked off. The lady, as in the case of the writer, had no faith in the remedy, and therefore thought no more about it. Some weeks afterward the woman called again at the store and remarked to the lady, "I see that your wart is gone." The nature of the remark caused the lady to remember the circumstance of the wart, and to recognize the one who had relieved her of it, answered, "Yes, and I owe you the best silk dress in the store," and forthwith cut it off for her.

Now, in these instances, and hundreds of others of a similar character of which we have been credibly informed, not knowing anything of the *modus operandi* of the assigned cause, we do not know that the one depended upon the other in the relation of cause and effect. We must confess, however, that they place us in a dilemma out of which we cannot escape. If we deny that the effect was produced by the assigned cause, it may be inquired why the effect was produced in the time that would have been expected from a known and adequate cause? If we affirm that the assigned cause did produce the result, then comes the question, how did it effect it? In the first position, we cannot deny; and, in the second, we cannot explain; the first, therefore, is sustained by the greater probability, for the reason that a given cause may effect a given result, although we cannot comprehend its *modus operandi*.

In the same category of incomprehensible phenomena must be placed the fact that some species of snakes capture birds by impressing their minds. Some people, however, deny this, but as the writer has seen it, and shot a black snake in the

act of taking a small bird into its mouth, it is not probable that he will be convinced that they do not do it.

The assertion of Dr. Hunter that he could not authenticate a single instance in two thousand cases in a lying-in hospital in which impressions upon the mother's mind had marked the child, proves about as much as the denial of the late Professor Harrison, of New Orleans, that the white substance of the brain was fibrous, after we had made such an exhibition of it that every one present, but him, saw it.

As no mother can know whether her child has been injured or marked before she sees it, it is not to be expected that every one who entertains such apprehensions should find them realized; and, on the contrary, it is not to be expected that every mother who has received an impression should either remember it, or found upon it apprehensions of something disastrous to the child. In the present state of our acquaintance with human physiology, we cannot, and dare not, without presumption, assert that a very slight apprehension, made upon the mind under favorable circumstances, may not produce upon some part of the system a very marked result.

A gentleman, about fifty-five years of age, highly intelligent and of a sanguine bilious lymphatic constitution, called upon the writer in his cabinet, and exhibited to him a highly aggravated case of parenchyma of the thumb, stating that he desired for a little while, the use of a piece of loadstone, or natural magnet, to reduce the swelling and inflammation of his thumb with. We gave him a piece very strongly charged, which weighed about a pound and a-half, and not having any faith in the virtue of such an application we desired to witness the operation. He carried it over the thumb, but close to it, from the extremity toward the elbow, and then by a semicircular movement brought it back again. He continued this operation about an hour, in which time the thumb became much reduced in size, and from a deep florid color it became nearly white. Now, the question is, were these effects produced by the magnet or by his faith in its application? We must admit the one or the other, and when admitted we are as much in the dark about the *modus operandi*, as we can be about the psychological influence of the mother on her fetus.

1. Mrs. G., who was well known to the writer, upon going home rather late one evening from a neighbor's house, became frightened at a mole. The circumstance inspired her with fearful apprehensions, which upon the birth of the child were discovered to have been well founded, for its hands were turned outward like those of a mole. It lived but a few days.

2. A friend of the writer, a Scotchman, lost his mother in the act of his birth; shortly after this event his father came to this country and never returned; but twenty years after, his son came to this country, and when they met the following dialogue took place:

FATHER. "You say that you are my son; please to tell me how you know it?"

SON. "I do not know it, but I was so informed by my connections in Scotland."

FATHER. "But how do you know that I am the identical individual of whom your relations informed you?"

SON. "I do not know it, but I have inferred it from circumstances connected with you."

FATHER. "What are those circumstances?"

SON. "You appear to be about the proper age—you have the person which I expected to see, and I have found you living where I was instructed to go, and you have the proper name."

FATHER. "Such evidence may satisfy you, but it will not do for me. Take off your coat; now take off your shirt; now turn your back to me—you are my son!" and he threw his arms around him, and kissed him, and wept upon him. When he had so far recovered from his joy, he proceeded: "I will now tell you how I know you to be my son. When I married your mother, she would not eat eggs, but sometime afterward, when she was carrying you, I was approaching my door, unobserved by her, and found her standing in the door picking the shell from a roasted egg. 'Ah!' said I, to her, 'you have come to that, have you?' at which she threw the egg at me, and I caught it in my hand, and as I raised my arm to throw it back at her, she turned her back to me, and I hit her in the middle of it, and here is the splash it made upon your back."

The writer has no doubt of the truth of the above state-

ment—he has seen the mark, and knows of nothing but an egg that could have made such a splash.

3. Mr. F., a good scholar and able mathematician, thirty-five years since a teacher of the writer in mathematics, was very greatly deformed in his body ; when down, he could not get up, nor could he do more than get the points of his fingers to his face or any part of his head. When he moved, he did it by the aid of a long stick which he would project and plant before him, and then drag his body upon the points of his toes, with a serpentine motion after it. The last joint of each fore-finger had the shape of a snake's head, and always had, to the balance of the finger, the position which a snake's head usually holds to its neck. He was very strong in his neck and jaws, and when angry he desired to bite. He could neither mount nor dismount from a horse, and yet he traveled much on horseback ; and when his horse would run away or become unmanageable, he would pitch himself headforemost upon the ground. He was the most talented and enterprising member of the family.

The cause assigned by his mother for his condition was the coiling of a snake around her ankle. The writer has heard her narrate the circumstances of the event, and the conviction it produced on her mind that it would prove unfortunate to her child.

4. "Esquiral, a celebrated French medical writer, in adverting to the causes of madness, mentions that many children whose existence dated from periods when the horrors of the French revolution were at their height, turned out subsequently to be weak, nervous, and irritable in mind, extremely susceptible of impressions, and liable to be thrown by the least extraordinary excitement into absolute insanity."—*Combe's Constitution of Man*.

5. "A lady of considerable talent wrote as follows to a phrenological friend: 'From the age of two years I foresaw that my eldest son's restlessness would ruin him, and it has been even so. Yet he was kind, brave, and affectionate. I read the Iliad for six months before he saw the light, and have often wondered if that could have any influence on him. He was actually an Achilles.'"—*Combe's Constitution of Man*.

6. The following case, by S. Sleeper, M. D., is reported at

more length than was necessary to our purpose, and hence we have availed ourselves of its important facts only.

Mrs. B., aged about thirty-four years, and of more than ordinary strength of mind and cultivated intellect, in the sixth month of gestation, with unusually good health, for one in her situation, and buoyant spirits at her prospects of issue, which she much desired, was compelled to see and hear frequently a young bear from California, which was housed upon a lot adjoining her residence—it made what she called an “unearthly noise,” but one that much resembled that which a lunatic brother of hers made while a member of her family. This noise gave her much trouble, she strove against it, but to no appreciable effect. She never saw the animal without having her mental equilibrium much affected. Her health declined, and before the full period of gestation arrived, she had all those troublesome symptoms that the gravid uterus frequently produces, and in the most aggravated forms.

Finally the child was born, and lived about twenty hours. Dr. L. Sleeper and Dr. Darland then examined its physical conformation, and the following is their report of it: “The feet and ancles resemble *talipes vulgus*—the soles of the feet are flat, and the heels project beyond the usual length; the thighs are flexed upon the abdomen, and the flexor muscles so contracted as not to admit of full extension, without violence to the tissues involved; the same is the case with the superior extremities, they could not be raised above a right angle with the body; the wrists turn outwardly; the fingers overlap each other; the nails are elevated on the dorsum and quite pointed—much resembling claws; the arms, legs, and back are covered with a fine hair, from three to six lines in length, and of a dark brown color, and so abundant as to strike all with astonishment; the skin on the back and extremities was remarkably rough; the face and head appeared natural.”—*Medical Examiner*.

The gentleman who can separate this monstrosity from the assigned cause of it, must have a very pliable imagination.

7. By B. F. Hatch, M. D. “Six years ago my brother had in his employ, as domestics, a young married couple, who procured a turtle about the second month of her pregnancy, with which she used to amuse herself by placing a coal of fire

upon its back, to witness its struggles for relief. In this case there was no fright: but for some weeks a daily recreation. The birth of the child clearly evinced the folly of the mother. Its deformity was frightful in the extreme. The upper jaw was entirely wanting, there being nothing to fill the space between the lower jaw and the nose. The nose was merely a fleshy flap with a tooth protruding from its end. Its head was so greatly deformed as hardly to be considered human; it fortunately died in about two weeks."—*Boston Domestic Journal of Medicine*, Vol. 1, No. 8.

S. By M. J. McCormack, M. D. "The first case I will allude to is a near relative (an uncle), who presents a very extraordinary mark all down his thigh and leg, which (strange though it may seem, is nevertheless true) is much more vivid and prominent during the summer season than any other time. The appearance it then presents is that of a red currant tree branch in full fruit; the fruit being regularly raised and standing out of the cuticle, having a bruised appearance, with the juice squirted all over the limb. Now, in connection with this is the circumstance of his mother, when not more than six weeks or two months pregnant with him, being engaged (as the ladies of that period were in the habit of being) in making some preserves from red currants; and while in the act of squeezing the muslin bag containing the fruit, it burst and covered her whole face. Being a woman of strong presence of mind, and being fully impressed with the prejudices of that day, of the effect the mother's mind had on the child, instead of putting her hand up to her face, at once passed it down the thigh and leg; at the time she did so she declared it was to prevent her offspring being disfigured; the result was as above described. I may further add, that the party alluded to is now a very distinguished officer in her majesty's navy, and I have myself often seen the appearance of the leg, which in summer is very startling."—*London Lancet*.

In this case the mark seems to have resulted from the circumstance, but its location was from her volition, and this peculiarity renders the case more confirmatory, but at the same time more mysterious.

The three following very interesting cases we extract from the New York Scalpel:

“A few years since, we were requested by Dr. Moore Hoyt, a gentleman whose powers of observation and veracity will not be questioned in this city, to examine an infant of a few months’ age, and to bring with us our pencil and a bit of Bristol board, as he designed to publish a description and drawing of the case he wished to submit to our notice. We found a very healthy child and mother; the former presenting an eschar directly across the patella—or knee-pan, as it is called by the people—of each knee. They were of irregular form, as if made by the scratch of a nail or pointed instrument, and from two to two and a-half inches in length. The doctor was much astonished to observe these wounds at the birth, as there was no instrument or hard substance near, and the labor was perfectly natural. On careful examination of the eschars, this astonishment was greatly increased, by observing that the wound on one knee was half united by a recent cicatrix. This was sufficiently defined to put its character beyond a doubt. No one in this city who knows Dr. Hoyt will question the accuracy of his conclusion, or his want of sufficient interest in so remarkable a case, to induce a thorough and critical examination. It was then evident, that this state of the knees had been produced within the womb. But how? The mother had spent, for a number of days, some hours daily on her knees, leaning over a cradle, and nursing a sick child. She complained of pain on arising, but did not anticipate any deformity in her child. When we saw the eschars, they were completely healed. This process, Dr. Hoyt informed us, went on without interruption.

“The next case occurred in our own practice. A lady of great equanimity of temper, and extremely delicate constitution, during the second month of gestation was presented by her husband with a pair of earrings. These she was exceedingly desirous to wear the same evening to a party, but found it impossible to insert the hoop into one ear, as the hole had partially grown up. The attempt was therefore abandoned, with some disappointment, and the expression of apprehension that her child would be marked. We were consulted on this point, a few days after the event, and asked if such things were ever true. We unhesitatingly answered, no; for at that time we treated such stories with ridicule. Judge, then, of

our surprise on observing one of the ears of the child present, at birth, a hole in the center of one lobe of the ear, so nearly perforated, that, on stretching it slightly with two fingers, the unperforated part proved so thin as to be absolutely diaphanous ; a deep cleft running downward for a quarter of an inch from the center of the hole.

“ But these cases, astonishing as they are, are far surpassed in interest by one, which, from its very peculiar nature, it was impossible for us to authenticate by personal inquiry and observation. The high respectability of the parties who were our informants, and the circumstances under which the case was related to us, leave no other course than to give the facts, however wonderful, our entire belief. In narrating it, the parties must be nameless, as all, so far as we know, are living. We trust they will perceive our intention, and impute it solely to our desire to post up a matter of intense interest to humanity and science.

“ Mr. A., of the northern part of this state, married, some forty years since, a lady of an adjoining state. Pecuniary circumstances, at the time of the marriage, rendered offspring undesirable. Within a year, however, it became evident to the wife that their wishes were no longer to be realized ; on expressing this belief to her husband, she was, at the moment, quite shocked at the dissatisfaction with which he received it. Taking his hat shortly afterward, he left the house, and was absent for nearly an hour. He was distressed, on his return, to find his wife in tears. He assured her immediately (for they were devotedly attached) that he was rejoiced to learn the probable realization of her announcement ; that he was now satisfied with the condition of his pecuniary affairs and convinced of their stability.

“ The wife dried her tears, but soon expressed her conviction that, in some way, her expected offspring would suffer from her agitation. The husband endeavored to remove her apprehensions, by gentle and affectionate ridicule. But her fears continued at intervals during her early months, and gradually increased as gestation advanced. The relief of the parties was great, at the birth of a healthy and well-formed boy. No peculiarity of conduct in the child was observed, until several months had elapsed, and then their fears were renewed, by its

extreme unwillingness to approach the father. This gradually increased, until its dissatisfaction was manifested by loud and continued screaming when brought near him. As age advanced, the most persevering efforts were made to overcome this repugnance; the utmost degree of persuasiveness and ingenuity, diversity of childish gifts and sports, all were tried in vain, and the attempt was abandoned in despair. The feelings of the father may be judged by parents, for he was, and is, an exceedingly affectionate man.

"This continued, and at the time of our receiving the information from a near personal relative, the son, then an active and rising member of the bar, had never been able to speak a word to his father, though the most painful efforts were made.

"We give this case as we heard it from a lady and her husband, whom to know is to revere. It was told us by the lady just arising from what we all supposed would be her death-bed, and an offer was made at the time to introduce us to the parties. We now regret that our years induced us to decline the proffered introduction. We did not feel willing, at the time, to make any personal inquiries in a matter that had been productive of so much distress, and that time had somewhat alleviated.

"The next case was related to us by Dr. Cox, now practicing at Williamsburg, Long Island. Dr. Cox is certainly authority that few who know him will doubt. His urbanity and truthfulness are known. A lady constantly attended upon her dying father; his disease was a cancer on the forehead, and required repeated daily dressing: this was done by the daughter, who was in the early period of pregnancy. In a few months the father died, and the daughter was delivered, at the full period, of an infant disfigured by a large tumor on the forehead. This, the doctor assured us, became an open sore, in all respects similar to the one of which its grandfather died. It resisted every application, and soon terminated the child's life. No one, Dr. C. observed to us, could have told it from a cancer."

The preceding cases present an illustration of each possible class of psychological impression—in some, fearful apprehensions were entertained, from the previous mental shock; in

one the fetus suffered from the mother's amusement, where no apprehension existed; in another no apprehension existed, but the fetal injury was directly referable to the mother's uncomfortable situation at a given time; in another the fetus was marked on the leg instead of the face, and the choice was determined by the mother's volition; in another the fetus suffered through the mental agitation of society; in another the mother's repugnance to the father, at a particular moment, was entailed upon the child for life, to which a very similar case now exists in Cincinnati.

In some of these cases, the cause embraced no object—it was mental, and therefore it could only affect the fetus, mentally; while others of them had direct reference to the fetal body, and it alone suffered.

Finally, all of them hold such a natural relation to their assigned causes, as to render it far more difficult to doubt, than to believe.

SECTION II.

INFLUENCE OF CHILDREN ON A MOTHER BY A FIRST HUSBAND, WITH REFERENCE TO CHILDREN BY A SECOND.

This subject, if possible, is more mysterious than the former, and probably not less important in its intended influences upon society, and therefore its discussion and establishment, beyond doubt or equivocation, will have that influence which is extended to all the organic laws, that admonish us with reference to all that is near and dear to us in life.

The conclusion contended for, under the circumstances, is, that a mother's constitutional identity becomes merged in that of her first husband, and consequently her children, by a second husband, will not resemble their father nor inherit his qualities, necessarily, nor her own, but those of her first husband.

In support of this law, there is not wanting an abundance of facts—enough to arrest avaricious parents in the sale of their daughters to old and debauched rakes for property, under the expectation that they will soon die—enough to convince

young women that just as certain as they shall have one child by such a creature, her own constitution becomes as base as his—nay, more, that she has bartered for property or some other unworthy consideration that power which she originally possessed, to render justice to a second husband (through his children), whom she may wed through love and affection. But to the facts.

It is now an undoubted fact, a fact admitted by every one conversant with the subject, that a mare, after having a foal by an ass, will never after bear a colt by a pure-blooded horse that will not possess qualities and resemblances of the ass; and among stock raisers, no one can be found who would put a mare, no matter how excellent her blood, to the best or any other blooded horse, after she has once had a colt by an ass.

When the writer was a student of medicine, Professor Caldwell, in support of his doctrines of sympathy, introduced the following well known fact: Lord Morton had a finely blooded mare, and, by an accident, a quagga (which is a variety, possibly a species, of the wild ass of Africa) found an opportunity to cover her once, and after the due term of pregnancy she had a hybrid foal which in very many respects, bore strong resemblances to the quagga. In the proper season of the three succeeding years, she was covered by a black Arabian horse, and she had three foals, all of which, however, bore strong resemblances to the quagga. These facts may also be found in a late number of the *New York Scalpel*.

To the same point there is another fact which we add:

“A mare belonging to Sir Gore Ouseley, was covered by a zebra, and she gave birth to a striped hybrid. The year following, the same mare was covered by a thorough-bred horse, and the next succeeding year by another horse. Both of the foals thus produced were striped, i. e., partook of the character of the zebra.”—*Scalpel*.

In the preceding cases, it is proper to remark, that the males were of species widely differing from their own, consequently other evidence becomes requisite for the establishment of the proposition: but this can be easily done.

Mr. McGillivray states, that “in several foals, in the royal stud at Hampton Court, got by the horse Actæon, there were unequivocal marks of the horse Colonel—the dams of these

foals were bred from by the Colonel the previous year. Again, a colt, the property of the Earl of Suffield, got by Laurel, so resembled another horse, Camel, 'that it was whispered, nay even asserted at Newmarket, that he must have been got by Camel.' It was ascertained, however, that the mother of the colt was covered the previous year by Camel."—*Scalpel*.

Facts like the preceeding are well known among all growers of cattle, hogs, and dogs; but, while upon the subject, we may as well present two or three more facts from the same excellent authority, Mr. McGillivray.

He says: "It has often been observed, that a well-bred bitch, if she has been impregnated by a mongrel, will not, although lined subsequently by a pure dog, bear thorough-bred puppies in the next two or three litters."

"The like occurrence has been noticed in respect to the sow. A sow of the black and white breed (known as Mr. Western's breed) became pregnant by a boar of the wild breed, of a deep chesnut color. The pigs produced were duly mixed, the color of the boar in some of them was very predominant. The sow being afterward put to a boar of the same breed with her own, some of the produce were observed to be stained or marked with the chesnut color that prevailed in the former litter; and, on a subsequent impregnation, the boar being still the same breed with the sow, some of the litter were also slightly marked with the chesnut color."

"A pure Aberdeen heifer was served with a pure Teeswater bull, to whom she had a first-cross calf. The following season the same cow was served with a pure Aberdeenshire bull; the produce was a cross calf, which at two years had very long horns, the parents both hummel. A pure Aberdeenshire cow was served, in 1845, with a cross bull, i. e., an animal produced between a first-cross cow and a pure Teeswater bull. To this bull she had a cross calf. Next season she was served with a pure Aberdeenshire bull—the calf was quite a cross in shape and color."

To settle this question, pretty conclusively, we have presented facts enough from the inferior animals, but as man has ever, if not philosophically, at least practically, considered himself an exception to all the laws that govern the former,

observations enough, bearing upon the same subject, have not been made upon human society to produce an equal conviction; we have, however, a few, which are much to the point. But we do not believe that they so frequently occur, and for this opinion our reason is this: The females of the domesticated inferior animals have no choice as to the males with which they shall have connection, constitutional incompatibilities, though of good blood in the abstract, may frequently be brought together; but with man there exists an inherent sympathy or affinity between individuals of the two sexes, and this affinity is generally in accordance with organic law, and hence this law is more frequently infringed through mercenary motives than any other. We do exceedingly doubt whether such phenomena would result from constitutionally normal marriages. To convey more clearly our opinion, or rather suggestion, we will present cases to illustrate it.

Suppose a bilious woman should marry a bilious man, or one of the compounds of the bilious, and more particularly one of the lean ones, as the bilious sanguine, or bilious encephalic, she would most clearly violate one of the organic laws which was intended to regulate the function of procreation; and by so doing she has contaminated her own constitution—she has almost as greatly violated a law, as the mare which has a foal by an ass—such a man was not her choice—she sacrificed it at the shrine of some other consideration; but she has done it. Now, suppose her to take a second husband, and in doing so makes a normal selection, possibly a sanguine, or sanguine encephalo-lymphatic one, her children, as in the case of the mare and the horse, after the former had had a mule, would partake more or less of her first husband. But, in supposing her to have made, in both instances, a normal alliance, it does not appear to us that her second children would partake of the marks and qualities of her first husband; and for the reason that she violated no law, and in conforming to the law, she did not lose her own constitutional identity.

We do not know that this reasoning is valid, yet we think it deserves attention in the investigation of this subject. So long as a woman obeys the organic laws of procreation, we

can conceive of no reason why she should lose her own constitutional identity. Our suggestion in the premises is partly the result of one case which we have observed.

In the interior of Kentucky, a bilious encephalic lady married a bilious gentleman of the florid variety, and had children, but we never saw any of them; subsequently she married a bilious lymphatic, though not entirely normal, was far less objectionable than the former, by whom she had one daughter. Now, let it be remembered that the first husband had reddish hair and grayish blue eyes, and the second had brown hair and eyes, and so had she. The daughter had the features of her father, one eye and the hair of one side of the head had the color which was common to both of her parents; but the other eye was bluish gray, and the corresponding side of the head was red—marks peculiar to her mother's first husband, between whom there existed an organic incompatibility.

In further confirmation of this subject, we have two cases by Dr. Harvey, who states that the first was communicated to him by the Reverend Charles Combie, of Tillyfour, minister of Lumphanon, in Aberdeenshire, and the second by Professor Simpson, of Edinburgh.

"1. Mrs. —, a neighbor of Mr. Combie, was twice married, and had issue by both husbands. The children of the first marriage were five in number; of the second, three. One of these three, a daughter, bears an unmistakable resemblance to her mother's first husband. What makes the likeness the more discernible is, that there was the most marked difference in their features and general appearance, between the two husbands."

As "there was the most marked difference in their features and general appearance, between the two husbands," it is much more than probable that they were of very different temperaments, because, between individuals of the same temperament there is something of a family likeness, invariably. In conformity, then, with our suggestion, her first husband, at least, may have possessed a constitution incompatible with her own.

"2. A young woman, residing in Edinburgh, and born of white (Scottish) parents, but whose mother sometime previous

to her marriage, had a natural (mulatto) child by a negro man-servant, in Edinburgh, exhibits distinct traces of the negro."

This case is in precise conformity with our suggestion.

The two following cases were communicated to Dr. Harvey by Dr. George Ogilvie, and Professor Pirre, respectively:

1. "A woman was twice married, and had children by both husbands," and those of "both marriages were scrofulous, although only the first husband had marks of *this* diathesis; the woman herself, and second husband, being to all appearance quite healthy."

2. "Mrs. H., apparently, perfectly free from scrofula, married a man who died of phthisis. She had one child by him, which also died of phthisis. She next married a person who was to all appearance equally healthy as herself, and had two children by him, one of which died of phthisis, the other of tubercular mesenteric disease—having at the same time scrofulous ulceration of the under extremity."—*Scalpel*.

These cases are strong, interesting, and instructive, but as they do not show that they did not originate in a violation of constitutional law, they do not really establish any new principle in the animal economy, because it has long since been conceded that mischief will forever succeed the violation of organic law. We are not informed as to the constitution of the mothers, and we can only approximate to that of the first husbands. Phthisis, idiopathically, occurs most frequently in the sanguine encephalic and sanguine encephalobilious constitutions. Now, the mothers may have been one of these, or a sanguine bilious, or a bilious encephalic.

There is yet another question involved in this subject. We have suggested that the impression made on the female by children of a first husband may possibly result from a temperamental incompatibility between the parents; now, the question is, may not an unsoundness in the first husband constitute an organic incompatibility—such as should affect her constitutional identity? It must certainly be a violation of organic law for a woman to have children by a man who possesses a mercurial or syphilitic disease in an occult form, or a hereditary predisposition to cancer or phthisis.

It must now, we think, be quite obvious, that before these nice questions in physiology can be satisfactorily settled, we

must know more about the subject of the human temperaments. Nevertheless, the facts as they stand, by the exercise of proper discretion, may be rendered inservient of important consequences. They should make women prudent as to whom they take for a first husband, and men more prudent as to their marriage with widows. They should at least learn whether her first husband was mentally a villain, or corporeally a putrid mass. In either event she has probably, either through ignorance or willfulness, rendered herself unfit for a future mother. Under such a circumstance, she would much more promote the good of society by living a widow, than by becoming the mother of either social pests, or the victims of early disease and premature death.

We have before us a case of a directly opposite character—one that has been a matter of surprise to many individuals in the community where it exists. A white man in the vicinity of Covington, Ky., had eight or nine children by a dark mulatto woman—all of the children, of course, had impressed upon them unmistakable indications of the black race. The mother of these children died, and the father married a white woman, by whom he had two children, which are now living, and which bear as indubitable marks of the black race as do many of the first children.

We shall not attempt to found upon this, or any other one fact, a principle, and yet we may indulge a little in speculation. It will scarcely be denied as being possible that he may have absorbed, by his cutaneous surface, some of the elements peculiar to the negro constitution, by sleeping in contact with one thirty or more years. It is, further, well known that the surface of the negro emits a peculiar odor, and therefore is it not possible that he may have received, through his lungs, some of the elements of the negro constitution? Finally, is it not possible that he may have lost his constitutional identity by sleeping and otherwise living with a colored woman for so many years?

Another modification of this subject comes up for a passing consideration, before we conclude. When an aboriginal female has had successful intercourse with a white man, can she afterward conceive by one of her own race?

By the Scalpel, we are informed that Dr. Harvey says:—

"This question is suggested by an observation made, in various parts of the world, by the excellent Count de Stuzelecki." That they will not, he says, that "Whenever such intercourse takes place, the native female is found to lose the power of conception on a renewal of intercourse with the male of her own race, retaining only that of procreating with the white man."

We have been much among our south-western Indians, and although we never made any observations with reference to this question, yet we feel confident that if the fact had so existed among them, we would have heard of it. It is certainly not the case with our black women. There is now in the city of Covington, a black woman whose first child was by a white man, and yet she had, afterward several children by a black one.

If Stuzelecki was correct in his observation, it would require but a short time to get clear of the African race altogether. Go where we may among negro women, whether at the North or the South, we shall seldom find a mother of a family that does not give us a view of the various tints resulting from a mixture of black and white. There is a law in relation to the amalgamation of the races; but Stuzelecki has not yet indicated it.

CHAPTER III.

OF MATERNAL DUTIES IN RELATION TO HER CHILD.

It is not our purpose, at present, to treat of female diseases, but the duty we are endeavoring to render to children, makes it, as it has thus far been obligatory upon us, to involve the mothers in our remarks during the period that their well-being shall especially depend upon them.

The life, health, and proper development of the child, depend upon the quality of its food, which should consist of the mother's milk, and upon indispensable attentions to its person; consequently she should now, in a great measure, cease to think of drink, food, rest, or exercise, except in relation to the well-being of her child. Her wants should now originate in it, and not in any of her own personal desires.

Under the influence of such a responsibility, she will carefully avoid, after the delivery of her child, every variety of drink or food which is suspected to possess a fever-producing influence. She should not attempt to sit up too soon, nor too long at a time when she does. Her chamber should admit of sufficient ventilation, and be maintained, at a comfortable temperature. Stimulating diet and drinks should, in a great measure, be avoided—the wisdom of officious old ladies to the contrary, notwithstanding. Last, but not least in point of importance, she should see but little company. To sustain this injunction, we are aware, in some sections of the country, is very difficult. The lying-in chamber is too frequently regarded as the proper place for the neighboring women to assemble for the purposes of talking and feasting. We have seen women more troubled about the accommodation of their guests than about themselves and children. As the attending

physician is held responsible for the proper recovery of his patient, he should protect his responsibility by ejecting from the house all those who had no other business there but to talk and eat.

If she did not commence before the birth of her child, she should not now lose a moment of time in guarding against a common calamity, to both mother and child, known as "sore nipples." As soon as she recovers from the fatigue of parturition enough to admit of it, the child should be applied to them, and this application should be repeated as frequently as every three, four, or five hours, unless contra-indicated by some important contingency. This duty is imperious, if she would avoid the suffering to herself and the injury to her child, which are inseparable from sore nipples. We say imperious, because we regard the affection as being produced by the effort of the child to draw the milk from the greatly distended milk-vessels in a state of incipient inflammation, produced not only by this distension, but in part by an inspissated condition of the milk, which has partially obliterated the vessels themselves. In this condition of the nipples, the efforts of the child to obtain its proper nourishment, draws the skin from them, which terminates all her comfort in suckling the child, and all certainty that it will be regularly and sufficiently fed.

As such attentions to the nipples and breast as will tend to prepare them for their important functions should not be postponed until the moment of impending danger arrives, she should, about the close of the seventh month of pregnancy, have them drawn two or three times a day by one of her children, a servant, a puppy, or a lamb. By this practice they become accustomed to the process, the cuticle is rendered pliable and delicate, the skin becomes fit for its function, and inspissation of any secretion that may happen and consequent inflammation are prevented.

Many lotions have been recommended for hardening the nipples. Such a thought is ridiculously mechanical. Who ever knew any portion of the cutaneous surface to become hardened by washing? By friction the epidermis is hardened and the skin rendered more healthy to a certain extent. This, in the absence of an agent to draw them, the woman can do

for herself, by the use of her fingers and a little flour paste and warm water. This process will also keep them clean and prevent the deposition of cuticular matter in the superficial follicles, which, when it happens, never fails to irritate and inflame. For this purpose, the use of soap and water have been recommended, but soap is as incompatible to the nipple as to other parts of the surface—paste is much better, and after the use of the napkin, they should be allowed to dry in both air and light.

When we compare the entire compatibility which nature has established between the milk of all healthy women and the development of their children, it can be regarded as but little less than criminal for her to delegate to any other woman the privilege of nursing or suckling her child. This important duty, it is true, under some contingencies, may be contra-indicated, but as a general rule, even when the mother's health is far from being good, her milk is its most compatible food, for at least several of the first weeks of infancy. Furthermore, she should not allow it to be fed with anything, while very young, unless she cannot possibly support it at the breast. Careless and inexperienced nurses frequently do implant irreparable mischief in the cleansing, dressing, and undressing them—hence these offices should be scrupulously attended to by herself. Furthermore, she should not allow it to remain either wet or cold, under any pretext.

As soon as practicable, she should take moderate exercise in the open air, but only in dry weather, and she should participate in such society and amusements as may contribute to the healthfulness of her secretions, avoiding every species of dissipation. Furthermore, she should carefully resist the opportunities to eat that which is improper, or too much of anything, under the plea that she has her child to support; because the milk of a plethoric woman will prove as mischievous to the child, as that of a partially starved one. Nature has been careful to provide for both her and her child under the observance of the strictest temperance in all things.

Finally, every woman, after having called to her aid the services of a physician, should consider herself bound by every moral consideration, and also by every selfish one, that has the well-being of herself and child for its object, to

implicitly carry out his instructions, and to enforce this duty upon her nurse. If she have unfortunately employed a block-head, it is not to be supposed that she was more discriminating in the selection of her nurse; consequently, it is to be presumed that the advantage is still in his favor.

And yet, it must be confessed, that there is in society, even among the well informed, an astonishing amount of credulity and a superstition that would scarcely deserve toleration in a savage community. We have known wealthy and intelligent gentlemen to employ, as a physician, a man so stupid and dull that he would not have employed him to groom his horse, and for no more cogent reason than that he was a seventh son, or had been among the Indians, or for some imagined reason, that he must possess a pathological and therapeutical instinct. It does seem that the pretensions of such quacks as we frequently observe to be engaged in the practice of medicine, should be exposed; or, what would be a better plan, let no man practice until he has received a certificate of proficiency in the art of medicine from some chartered medical school: anything, in preference to having the lives and health of the community intrusted to men ignorant of the first principles of medical science.

CHAPTER IV.

OF PHYSICAL INJURIES TO THE CHILD.

SECTION I.

NECESSITY OF A FOSTER MOTHER.

PHRENOLOGISTS well know that there are many women who have an insuperable aversion to the care of their own children—are always pleased to find some one—any one, who will relieve them of this responsibility. The crime of infanticide proves the existence of such women. It always gives us pain to see any one, but more especially a woman who has an aversion to children. We, of course, do not blame them—none of us can avoid our *likes* and *dislikes*—they are most generally entailed upon us; but it is very unfortunate to a man to have such a wife, and equally unfortunate that such a woman should become a mother.

That it is the duty of every mother to suckle her own child no one will doubt, except when by so doing her life or that of the child is endangered. We are taught that no woman should be relieved from the discharge of this duty, through a mere aversion to it, nor through the plea of ill health, unless confirmed by the judgment of an intelligent physician.

Hundreds of women, who have but a feeble sense of moral obligation or duty, possess, nevertheless, such an attachment to their children, that they would almost as soon part with life, as to surrender their infants to the care of others. When, therefore, the child has no other ground of hope and protection than its mother's sense or feeling of moral duty, its chance for a continued existence is very precarious. Now comes the proper question for the consideration of the husband and his

friends—which offers the best chance for the well-being of the child, the mother who has no affection for it, or a wet nurse who may or may not be dutiful?

We repeat that the mother's milk is the best for the child, other things being equal, and it should not be deprived of it for any trifling consideration; but it must be remembered that objectionable food is not the only cause of fatality among children; consequently a mother who entertains an antipathy for her child, or even views it with indifference, may by negligence destroy it. (We here remark that such a woman should not be permitted to become a mother a second time, for the reason that she will probably, according to the laws of procreation, entail her own mental constitution, in this respect, upon her daughters, and thus spread the evil upon society.)

We will now suppose that every fact and contingency, so far as known, has been duly weighed, and that it has been decided, either on account of the disability of the mother to nurse her child, or on account of an unwillingness to do it, or perhaps from some insuperable objection to her doing it, to employ a wet nurse for it. It should now be remembered, that, as a general fact, a wet nurse holds about the same relation to a good mother, that an artificial tooth or leg does to a natural one—even under the most favorable circumstances a poor substitute—but it is the only alternative, whether it does or does not destroy the child.

SECTION II.

OF IMPROPER NOURISHMENT

The old adage, “tricks in all trades but ours,” applies with as much truth to wet nurses as to any other class of individuals. They serve for a consideration, and like those of other professions, they will never fail to represent their own pretensions in the most favorable light.

If the child of the nurse shall be living, she is more to be suspected and watched than otherwise, because it is not to be supposed that she will, even for wages, neglect or endanger the health of her own child; and although she will probably

represent herself as having an abundance of milk for both, and she may have so prepared appearances as to indicate the same, yet the mother should exercise over her services an un-sleeping vigilance, for in the event of her not having enough of milk for both, she will not starve her own, but will clandestinely feed the other. Young and credulous mothers are frequently imposed upon in this way.

Vigilance, however, will soon detect any fraud that may be practiced, for if the child be sustained by other food than suitable milk, fretfulness and various manifestations of pain will attend it. The nurse may, as she frequently does, parry all this by the use of laudanum and such personal address as will make the mother believe that nothing but a little "colic" ails it.

But the time is not far distant when the cheat will become obvious—the mother will perceive that her child is not growing—that it is stunted, and presently diarrhea appears, and then she sends for her physician, whose investigations detect the fraud—possibly in time to save the child, and possibly not.

Thus, it not unfrequently happens that when parents have, as they believe, provided in the best manner for the nourishment of their infant, they lose it through the clandestine use of improper food.

On the other hand, the nurse may be honest and faithful—she may provide plenty of milk, and she may give it to the child, and yet it may not be nourished. Her milk may be as mischievous to the child as the improper food above remarked upon; and all this may result from the ill health or improper feeding of the nurse. If she live upon gross and indigestible food, or if she indulge in the use of ardent spirits, or if she be dyspeptic, or is laboring under a tardy condition of the liver, and if so, many gross and even poisonous elements, which should have been disposed of by the agency of the liver, are eliminated through the milk. Her skin or kidneys, or both, or the uterine system, may be at fault, and effete matter is vicariously cast off through the mammary secretion.

It is also well known that a capricious temper, more especially paroxysms of anger will render a woman's milk poisonous to a child.

That a mother can maintain, so far as can be ascertained,

even sound health, and fatally poison her offspring, and all other animals that partake of her milk, is a fact well known in this country to those who are familiar with the disease known as the "milk-sick," which is communicated by the cow to her calf and to those who use her milk. This single but well known and established fact, should teach every mother to be careful as to what she eats.

No matter, however, what has given the nurse's milk a diseased or bad quality, the fact can be detected by a close attention to the manifestations of the child. It does not sleep like a well child; it starts and cries as though penetrated with severe pain, and almost as suddenly falls again into unrefreshing slumber. When awake, it is uneasy and fretful, and the milk it receives is soon after rejected, or it excites alvine action, and passes through the bowels with rapidity and painfulness. The stools are of a pale green color with offensive odor and frequently mixed with milk curd; they are not generally frequent, but aqueous and copious, which, consequently, rapidly reduces and weakens it. Its flesh is flaccid, and skin pale. It does not continue long in this condition, before it suddenly emaciates and exhibits an alarming illness of both head and bowels.

SECTION III.

INFECTIOUS POISON IN THE MILK.

Although we have no direct evidence in support of the opinion conveyed by the heading of this article, yet we have enough, of an analogical character, to render all parents careful and vigilant upon the subject.

It will not probably be denied by any medical scholar of the present day, that a father possessing occult or secondary syphilis may transmit the disease in an active form to his child through the sperm that brought it into existence. No doubt but that it sometimes has a different effect, and produces some other form of disease. If this disease can be so obscurely communicated, as through the semen of the father, may it not be communicated through the milk of a nurse?

But suppose it cannot; may it not produce some other, but unrecognized, form of disease? and may it not be applicable with reference to porrigo, herpes, psora, etc.?

These last remarks are, perhaps, practically useless, as no parent would employ a nurse who was afflicted with either of them, in an active form, and it is not known that they exist in an occult one.

There is, then, at least, analogical evidence that such a transfer of syphilis is possible, whatever reason there may be against it; at all events, no discreet person will employ a nurse, if avoidable, who is thus afflicted.

Whatever may be the fact, touching the communicability of syphilis through the milk of a nurse, we can scarcely doubt that scrofula can be and has been. In confirmation of this opinion, we present a case that occurred in our practice:

Miss C., aged sixteen years, was, when only a few weeks old, in consequence of her mother's inability to nurse her, placed in the care of a wet-nurse, whose health at the time was supposed to be sound and vigorous; but before the time arrived when it was thought advisable to wean her, suspicion arose that she might not be, as the child did not flourish as much as all had reason to hope; when an investigation of the condition of the nurse was instituted, it resulted in the discovery that she possessed a scrofulous diathesis, and was therefore discharged. The child came under our treatment at the time, and has been, more or less, up to the present. Her ailment is evidently scrofulous, but manifests itself in a local, rather than a constitutional, form. We have been long and well acquainted with both of her families, and are sure that such a diathesis does not exist in either.

SECTION IV.

INFECTIOUS DISEASES.

The introduction of strangers into a family, to fill any domestic position, is always attended with some danger from infectious diseases. We have known white members of a family, as well as black ones, in the south, to contract

secondary syphilis from a house servant; and we have known the same misfortune to happen in the free states, through the instrumentality of hired white ones.

If a wet-nurse should have this disease, or either of the infectious ones of the skin, we may well suppose that the child, of which she has the care, will contract it. Such occurrences are said to be frequent on the continent of Europe, less frequent in England, and still less in the United States. However this may be, we know not; but sure we are that the propagation of syphilis into American families, by domestics, is not infrequent.

SECTION V.

INATTENTION TO CHILD'S NECESSITIES.

To attribute a mother's attentions to her child, to benevolence, a feeling of moral obligation, or to reflection, as the metaphysicians have done, is to mistake very widely the provisions of our Creator for the care and protection of our infancy. If the protection of progeny had been confided to the care of the superior sentiments, the population of the earth, at this day, would have been very small, compared with what it now is. Under such an ordination we would have had no savage races, nor degraded and brutal classes in civil society. No, the author of our being did not leave the helpless period of our existence to the vicarious functions of faculties which may or may not have even an appreciable existence. The feeling that binds a mother to her new-born babe, exhibits more passion, more enthusiasm, than her own love of life could exhibit—the only other feeling that can equal it, is that which constitutes the religious martyr. During the early infancy of her child, when it can interest no one else, she betrays for it a care, a vigilance, a self-denial, and a devotion that baffles all conception. We have often thought that a mother is amply compensated for her pains and privations in child-bearing and nursing by the pleasure she finds in her child—witness her pleasurable emotion at its very smile—it is now the exclusive object of her worship.

We have dwelt thus long upon maternal attachment, to enable our readers to fully appreciate the hazards to which a child is exposed, in being separated from its mother, even as regards its physical existence. If a mother's attentions are frequently insufficient to save the tender infant, how precarious must its chance for a continued existence be, with even the best of other women, and how much better its chance would be with them, than with those hirelings into whose hands they are generally cast.

The first and great care due to a child is the regular and timely application of it to the breast, that it may not be injured by hunger or over-feeding; the second consists in a vigilant attention to cleanliness; and the third, in cultivating regular habits, as regards its evacuations, exercise, sleep, and airing.

These attentions, to secure their accomplishment, must be urged by a much stronger feeling than that sense of hired obligation, which alone, in most cases, actuates the wet-nurse; and yet it must be confessed that a neglect in either respect may stint the child, impair its constitution, or terminate, prematurely, its existence.

Everybody knows that a well-fed calf, pig, or pup, if, during its growth, it be fed on plenty of nourishing diet, will make a finer bull, hog, or dog, than if greatly stinted during the period of growth. The same remarks hold good in relation to children; and we must give the attention necessary to maintain a good appetite and furnish the material of appropriation, if we would rear healthy children.

CHAPTER V.

OF MENTAL INJURIES TO THE CHILD

SECTION I.

THE VITAL FORCES.

WE found the preceding chapter all important to the physical well-being of the child ; and if, as we believe, life was given for usefulness and enjoyment, it will, *a priori*, be admitted that these two great ends as much depend upon a proper training of the mental faculties, as upon the good health and strength of the body.

The faculties in this class which fall under the care of the nurse, are those which preside over voluntary motion and the sensibility of the body, particularly to the skin, to the impression of surrounding bodies. Upon the proper cultivation of these faculties depend, in a great measure, the future usefulness and happiness of the adult. A lounging and idle man is never happy or useful, nor has he that mobility of muscle, or expansibility of lungs, which fit him for those occasions that peculiarly require the exertions of a man or woman. Their existence is mostly vegetative. This subject, although important, has hitherto claimed no part of the attention of either parents or nurses—accident has alone governed.

The idle man or woman is eschewed by every useful citizen—then, why should a child be permitted to be idle, however young, when it is not asleep ? As we indulge the body, so we develop the mental faculties which hold a relation to such indulgence. The great wish of most parents, and all nurses, is that the child, even when awake, shall lie still and be quiet ; if it do these, it is called a “ good child,”—yes, and

such children, without some unanticipated revolution, make good men, but the goodness is of that kind which we denominate good-for-nothing.

Some children are said to be cross—that is, when not asleep they are crying, and wherefore, for they are neither vicious nor sick? It is usually because of that condition of the system which demands motion as the only means of relief, and relief they usually obtain by crying, which gives exercise to the lungs and most of the muscles of the body. When they have cried enough to produce the necessary amount of fatigue, they again fall to sleep.

When a child is cross, it is usually appeased by giving it the breast, and through a desire of something to do, rather than through a want of food, it sucks. The practice of feeding children to quiet them, is attended with serious mischief. The stomach being frequently filled to repletion, at length becomes to require that distension which repletion produces, and thus the digestive function becomes impaired, and speedily following it is an impairment of the general health.

This repletion, furthermore, if it should fail in producing disease, by making a heavy demand upon the nervous system to dispose of it, produces sluggishness and an indisposition to motion, and finally plethora, and with it an aversion to motion, with dullness of mind.

To aid in manufacturing out of active and sprightly infants stupid men, the cradle was invented, which by the lulling influence of its motion, keeps the child quiet, promotes obesity and an indisposition to voluntary motion. In all our own reflections upon living organized structures, we should remember that nature always secures an adaptation between all the parts which are in anywise dependent upon each other. Hence, if we train the child to rest, to an indisposition to motion, all of the other faculties become adapted to this state of things; and nothing less than some extraordinary and continually active, or revolutionizing motive can effect the necessary change. A new order of development, in solid parts, and new modes of action must become established.

If we are understood by our readers, it will be clearly perceived by them that the old proverb, "Bring up a child in the way he should go," is as applicable here as in any portion of

a child's education. Instead of being trained to *inertia*, it should be trained to *motion*; therefore, as soon as it wakes it should be taken up, and kept up, until the proper period arrives for rest, and while it is up it should be carried about that the various objects in the chamber may become addressed to its senses. This motion of carrying it about, while an infant, will give it, in a sensible nurse, all the motion it may require, and its mind (which, for our present purpose, is only the motion of the brain) will obtain all the action that may be requisite.

By this mode of training, the faculty of motion will become active, and more developed—motion will be demanded for its gratification—this motion will promote a favorable development of the pulmonary, arterial, and venous systems, and nearly all the mental faculties, and greatly diminish the chances for consumption and general feebleness of health.

Now, what does it matter to a hired wet-nurse whether her charge shall finally be an idiot or a Webster? She is hired to give it nourishment and to take such care of it as circumstances may force. The more the child will sleep and the more quiet it is, the more time she will have for amusement or her own selfish purposes. If the child be fretful and indisposed to sleep to stultification, she will, as they frequently do, clandestinely give it laudanum.

Under this head there is another subject, which is highly important, but perhaps less so than the one we have just concluded; we allude to that mental faculty which, when properly endowed, forces us to personal purity or cleanliness in all things. The child that is brought up in filth has the delicate and healthful sensibility of the skin greatly obtunded. If its training is commenced by keeping its skin and clothes clean, it will, in a short time seek the cleansing process for the pleasure it affords it. By this attention the faculty will be improved, the skin maintained in a delicate and healthful condition, and in future life, it will give evidence, by personal cleanliness, that it was educated under civilized influences.

By a reference to our closing remarks upon the functions of the cerebellum, it must be perceived that now is the time to commence the development of the lateral portions of the

cerebellum, particularly with such children as may have a small chest, because upon this depends their exemption from consumption in future life.

By a proper attention to the skin, the organ of animal sensibility is developed ; and by a proper exercise of the body the organ of muscular motion is developed ; and under a proper development of both, there is no danger of consumption, of passive congestions of the brain, etc.

If, therefore, infants and young children be exercised until they become fatigued, they will not require a cradle to put them to sleep. We rejoice that in our exposition of the functions of the cerebellum, we have placed the necessity of early and thorough exercise beyond the reach of debate or possibility of doubt. Every intelligent parent can comprehend how it is that the life, health, and usefulness of his child are made to depend, not upon the rest, sleep, and fat of the infant, but upon as thorough attention to exercise as to food or rest.

Finally, neither infants, nor older children, should be allowed to become fat—it is not a condition of healthy nutrition, and a little interruption to it, is pretty certain to develop cutaneous or other diseases. If its fat cannot be kept down by exercise and a diminution of sleep, diminish also its food ; but this reduction can generally be effected by exercise and waking. By this early training, a vital system may be produced adequate to health, age, and usefulness.

SECTION II.

OF THE DEFENSIVE FACULTIES.

Resentfulness, fretfulness, harshness, and capriciousness of temper never fail to render their possessor, and those associated with and dependent upon them, unhappy, to say nothing of murder and manslaughter, which are sometimes their extreme results. A nurse, then, who is not particularly fond of children, or who is irritable, impatient, and fretful, may ruin the disposition of a child for life. If it cry much, it is scolded and perhaps spanked, and these are the remedies for

all its acts of disobedience, of willfulness, and of accident. She sometimes calls them directly into improper action, as, when the child hurts itself, it is taught to strike the object for retaliatory satisfaction.

There is, perhaps, no quality in a parent or nurse so essential to the future happiness of children, as patience—forbearance, and amiability of temper. Children should be taught self government—and to this end the nurse must manifest it. To suppose that scolding or whipping will put a child in a good and pleasant humor, is about as consistent as to suppose that an animal government can improve the moral faculties. A child should never receive from a nurse, and much less from a parent, a cross or angry word, nor should it ever hear such words between its parents.

With all these objections, it is better that the child should be sustained by a bottle, than by a wet-nurse whose mental faculties have not been properly disciplined.

When children are taught to know that they can obtain no gratification by crying for it, or by any exhibition of ill-temper, they learn to effectually govern themselves. It but seldom happens that either adults or children are discovered to persist in a course of conduct that yields them nothing but disappointment. The christian sect known as Friends or Quakers, succeed better than any other people with whom we have become acquainted, in teaching their children practical self-government.

SECTION III.

THE MORAL FACULTIES.

The moral faculties of children are manifested at a very early period, and any obliquity imparted to their action while young, is but too apt to follow them through life. We have frequently heard parents say that they would whip the faults of their very young children out of them, when they got older. Such an attempt as this would display as much ignorance of the laws of the human mind, as an attempt to whip out of them

the color of their hair or eyes, would an ignorance of the physical.

In our southern states, a gentleman selects his most intelligent and faithful servant to groom his horse, and usually the most lazy, awkward, stupid, and lying maid he has to take care of his children, simply for the reason that she is good for nothing.

In the free states the case is no better—most generally no inquiry is made about her parents, or about her own moral dispositions, but, is she able to carry the child, and can she be had for her food and a scanty wardrobe.

This subject is too important to be dismissed with only a passing remark ; therefore, we beg leave to enforce its claims upon the attention of parents, by two illustrations out of the multitude we have.

In traveling through one of our southern states, we called at a village hotel for dinner—the usual dining hour had passed, and our only company was the landlady, a most amiable and excellent woman. Upon entering the dining-room, we saw a servant girl, about nine years of age, with a child on her hip—she had, strongly marked, the head of a murderess. We turned to our hostess and addressed her thus:—“Madam, do you wish to have your children murdered?” She looked at us with astonishment, and answered, “No, sir!” “Then, take that servant out of your family.” With amazement, she remarked, “That brings to my mind what has happened.” “What has happened?” we inquired. She replied, “About two weeks ago my little son fell out of the second story window ; he says that this girl pushed him out, but I thought he must be mistaken, because I could not imagine any one so cruel as to do so ; and a few days ago my little girl came to me wet all over, and said that this girl put her in the creek and tried to hold her under the water ; but the servant, when challenged about it, said that the child fell in, and this seemed to me to be the more likely, because I could not believe any one to be so heartless as to drown a child.” We afterward learned that this girl was sent to the Louisiana market.

Under circumstances almost similar, we inquired of a lady

in Pennsylvania, if she wished to make thieves of her children? As may be presumed, she answered in the negative. "Then," said we, "you will discharge that nurse"—a girl about ten years of age. "It is a fact," observed the lady, "she does steal, and I have corrected her for it several times, but I never supposed that that would make thieves of my children." We then remarked, "It is no business of ours, madam; but as the friend of children, we have admonished you."

No one, who is the least informed upon the subject of human nature can now doubt, that it is a matter of the first importance that those who are to be associated with children, no matter in what capacity, should be constantly under the influence of a chaste and moral mind.

We do not contend that it must follow that a child which has been under the care of a thief will become one, because it is both possible and probable that its native powers of intellect and moral endowment will prevent it, but we still insist that such influences upon infancy do blunt the moral perceptions—do impress them with an unfortunate obliquity.

The moral faculties consist of justice and stability, and it is the duty of parents to train their children to a strict discharge of them. Such is the native strength of these faculties in children, that they are easily trained. The procrastination of duties or the evasion of them, should never be tolerated. When habits of honesty and punctuality are established in early youth, they are apt to continue through life.

SECTION IV.

THE SOCIAL FACULTIES.

These, like the moral, are manifested very early in life, and consequently, on behalf of children, they claim our special attention.

It is admitted, by all writers, that children are very imitative, more especially in all things that pertain to manners and habits. A woman, then, who sits, stands, walks, or dresses

in an ungraceful manner, should never be employed in a good family, or trusted with the charge of a child, more especially if a female. What can injure a woman more than ungraceful manners? And will not female infants as certainly acquire them from their nurse as they do nourishment from her breast? In truth, the nurse should manifest good taste in everything.

Furthermore, she should be so well-bred and kind in her disposition that she would, in the child, awaken its sympathy, even in behalf of a suffering worm; and yet, she should possess no sickly timidity. Worse than all these, is that credulity which delights in ghosts and hobgoblin stories—impressions are thus made which the best subsequent education and the most manly judgment cannot eradicate. Of all the vices of a nursery maid, an attempt to frighten children into obedience is, perhaps, the worst—they may recover from the evils of every other species of mismanagement, but from those which this practice engenders, never.

In every age of the world, the few have governed the many through the instrumentality of their superstitious fears and hopes. Man has ever been the dupe of his own credulity, and no class of men are so universally unpopular as the fearlessly candid—those who will not condescend to mislead their fellows.

And, furthermore, it is remarkably strange that not less than seventy-five per centum of men, in the formation of their belief, make no distinction between the possible and impossible; indeed, there are very many, even among the well-informed, who are more likely to adopt the latter than the former. A mere impossibility, like the “spirit rappings,” will more readily find advocates than a new demonstrability, such as those discoveries of Galileo, Harvey, Jenner, and Gall.

Upon a subject that admits of doubt, the people generally do not search for the truth, but for evidence to sustain some preconceived or selfish notion of it; and under such an influence almost every child in the land is now being educated. As people generally do not wish to see their trickery upon this subject exposed, we shall pass on to an application of the principle to the use of the nursery.

If there be a spot on earth in which candor, truth, honesty, kindness, chastity, and forbearance, should supremely reign, it is, in our opinion, the nursery of children; and yet it is, most generally, the private abode of deception and falsehood. The nurse, and very frequently the mother, for the purpose of securing her government over them, fill their minds with superstitious fears that follow them to the close of life, in defiance of their better judgment. What else has made almost every man in the land a coward in the graveyard? We have seen intelligent men in a graveyard shake with fear, as though they had an ague paroxysm; and we have seen them run, as though a squadron of hostile Indians were after them.

A few months since, a servant girl in our own family was told that we had two or three large boxes of human skulls in our cellar; she came home frightened into passionate crying or bawling at the recollection of having been so frequently exposed to an imminent danger of being devoured or taken to the abode by his satanic majesty by ghosts or hobgoblins. She suffered immensely, and had her constitution been more encephalic, it is possible that she might have been rendered a lunatic for life.

Some pious and well-meaning parents often injure their children to an irreparable extent. When the child is naughty, they often tell him that unless he becomes better, the "bad man" will carry him off. After a short time he becomes afraid to go into a dark place, lest the "bad man" might be there; but after innumerable admonitions of this kind, and finding himself to have invariably escaped, he ceases to have any fear of him, though he continues to avoid the dark, but why he cannot tell.

The child has now become absolutely injured—prepared for a reckless course of evil conduct. Instead of fearing the "bad man," he suspects his parents for having imposed upon him, and consequently he gives no attention to any of their admonitions.

If they had understood the peculiarities of the infantile mind, they could have, from such a government, anticipated the result. Let it be remembered, then, that a child has not, to an appreciable extent, either hope or fear as to any future—it acknowledges no future tense—it lives, hopes, desires, and

fears in the present tense only. The parent, therefore, who talks about a *hereafter, another world*, etc., has great need of a teacher for his own mind. And such a teacher is now needed throughout the whole land. And upon this principle, if the time which is now devoted to the religious instruction of children, up to puberty, was directed, with the same attention at home and at Sunday school, to natural history and the moral relations of society, we would have, comparatively, but few bad boys, and many more and better christian men. We do not entertain a single doubt but that this doctrine will become universal in practice; but, as we are fully apprised, it will be a long time first—not until teachers, generally, shall understand the juvenile mind, and preachers and legislators, the adult.

We have said enough to indicate to every parent his duty to his children in this relation, and upon the discharge of this duty, in a great measure, the happiness of the adult and the good of society depend.

Finally, under this head, a woman should not be intrusted with the charge of a child, unless she manifested good taste, amiable feelings, courteous manners, and a truthful intercourse with the children and domestics.

SECTION V.

THE INTELLECT.

If women, intellectually, were generally constituted like men, we would have much to say upon this subject; but, fortunately, most women know something, while most men have learned something;—we speak, more particularly with reference to the Americans, the Scotch, and Irish. To find a German who does not know something, is impossible, though he may have learned but little—we allude to the function of observation as directed to material things.

The faculties concerned in this function are the first of the intellectual which become developed—they enter upon their duty, feebly it is true, at birth; and a properly-constituted nurse will avail herself of every possible means to gratify

them, as being the best means of employing the attention of a child. Witness the anxiety of infants to gratify their senses of hearing, tasting, smelling, seeing, and feeling. This fact indicates the proper duty of the nurse.

But women who are defective in these faculties resort to every other possible means to entertain the child, except those indicated by nature. She will sing to them, rock them, but never show them any unfamiliar object. If old enough to listen to her, she will entertain them by a recitation of nonsensical stories. As soon as the child begins to notice objects, it should be trained to love nature, not alone for its happiness and usefulness, but in order that its mind may always find an employment more agreeable than tippling, gambling, or any other variety of dissipation.

By this early neglect of the perceptive powers of children, they do not become either sufficiently developed or active to save future life from unprofitable abstractions and worthless speculations upon all of the most useful or momentous concerns of life.

In view of what has been said in the two preceding chapters, what must be the maternal constitution of the woman who could willingly or indifferently resign her child to the care of a wet-nurse? Will any one contend that a husband should not find, in such a fact, an ample plea for a divorce?

Examples of this kind of training are met with every day. Society stares at the palpable evil, and forgets to seek a remedy. Time and a wider spread of these facts will materially tend to a better state of things. Surely, the time can not come too soon.

CHAPTER VI.

OF PERSONAL ATTENTIONS TO THE CHILD.

SECTION I.

WASHING THE CHILD.

THIS duty should be performed by the mother herself, but if she cannot, or should not, she should at least be cognizant of it. The first part of the duty involves two important questions, and we, of course, have a choice in both, and if we fail to sustain our preferences, our readers can adopt the contrary.

The skin of the child, at birth, is covered with a peculiar (we will not say "impurity," because nature uses nothing that is impure in the construction of her works), which was essential to its mode of fetal existence; it is tenacious, and of a soft gummy consistence. Now, the question arises, is it best to remove the substance immediately after birth, before it dries, or suffer it to remain, dry upon the surface, and finally scale or peel off? Both opinions have its advocates.

It is to be considered, that while this substance was essential to fetal life, it cannot be so to a directly contrary mode of existence; and to render this conclusion still more obvious, we have but to refer to the fact that it interferes with the function of the skin about as much as would a coating of wax. This is not all—it becomes more or less putrid and offensive to the smell. Furthermore, when it is permitted to remain and dry upon the skin it becomes a source of mechanical irritation, and of such an excoriation of some parts, particularly about the joints, as to require medical attention. For these reasons we advocate the immediate and thorough washing of the child before it is dressed.

Another question now arises of even greater moment than the preceding; it is, whether this washing should be effected with warm or cold water? Both opinions have strong advocates. We prefer the former, and for various reasons, which to us are insuperable.

The second great and indispensable want of a child is heat, as all that it now has, came from the mother, and all that it will have, until digestion and nutrition shall have been effected, must be at the expense of its body, for the oxygen that enters the lungs cannot produce heat without something to combine with. Some infants may have a little fat to spare for such a purpose, and might not suffer any further, under a cold washing, than an unnecessary waste of some of it; but the case is far different with one that is lean, emaciated, and feeble, which has nothing out of which animal heat can be produced.

The first want of an infant, at birth, is air, and, unless it be immediately had, death ensues; and, as we have before remarked, the next want is animal heat, and unless that with which it is born, be protected, death is as certain as it is in the first instance; therefore the washing of an infant with cold water, immediately after birth, is a direct effort to destroy it, however contrary the motive for such a practice may be. That death has sometimes occurred to such infants from cold washing we have not a doubt. We are fully convinced that the physician who would sanction it upon any child, but more particularly upon the feeble, does it without the sanction of science. Very young infants rarely take food enough for the production of repair and the development of animal heat, and hence the necessity of taking special care to keep them warm; consequently it should not be touched with a cold hand or cold air, during the first months of its existence.

Cold water is used by its advocates to make the child "strong." Cold water, further than a tonic influence upon the nervous system, has no strengthening virtues, and even in this respect, when used out of place, will produce disease. A well child then, has no need of it—would probably be injured by it. In adults, when digestion is all the time producing material for the production of repair and animal heat, we admit it to be frequently useful; but in new-born infants

all the facts are reversed—they have no heat of their own, nor material for repair—and yet heat is a *sine qua non* to their existence. How then is it possible that the abstraction of their borrowed heat, which they have not the means of replacing, except at the expense of their bodies, can strengthen them?

There is yet another powerful argument in favor of our position. Recent experiments have shown that infants have less power to produce animal heat than adults, in the proportion of 80° to 96°. This fact is illustrated by the efforts which all warm-blooded animals make to keep their young warm. The infant has just emerged from a temperature of 97° or 98°, into one of 65° or 70°, and with less power than the parent had by 16° to produce that temperature which is essential to its existence. Under such circumstances, it would require the abstraction of but a few degrees to destroy it.

It should be remembered that the child has just been removed from a temperature of 98° to that of the mother's chamber, which is much below it—respiration and metamorphosis have been rapidly increased to maintain its existence, in the reduced temperature into which it has been introduced; consequently, the obvious and most rational conclusion must be, that it should be washed with water at or about blood-heat.

The advocates of cold water refer us to the practice of savage tribes. What do savages know about the difference between the dynamics of a child and those of an adult? They know that an adult will not, usually, suffer by an immersion in cold water, if immediately after, he is enveloped in a blanket. But we have shown that there exists a wide difference between the conditions of an infant and those of an adult; for a savage will infer, through an ignorance of this difference, that if cold water will not injure an adult, it will not injure a child. Nor is this all; we have yet to be assured that savage mothers prefer cold water. Those acquainted with savage habits state, that women delivered of children while traveling, wash them with cold water; but this does not prove a preference for it. Some savage tribes, as soon as an infant is born, straighten it out and strap it fast to a board; we should do this also, if savages are to be our instructors.

Having arrived at the conclusion that it is far better and

safer to wash infants with warm water than cold, by a reference to facts which we confidently believe cannot be overruled or set aside, we proceed now to the discharge of the duty.

It has been very generally recommended, that, preparatory to washing, the infant should be "smeared" all over with fine lard, and then with fine soap it should be cleansed. We admit that a mild soap is preferable to strong soap, but as all soap or alkaline substances have more or less a destructive influence upon the epidermis, we would recommend, in lieu of the lard and soap, fine warm and thin flour paste. This will unite with the fetal substance upon the skin, which can then be removed by the use of warm water, and a flannel rag or a piece of sponge. Much care is requisite to remove all the fetal substance, which is the great object of the washing, from all the folds and flectures of the skin, no portion can be left that will not do subsequent mischief, more especially in the duplications of the skin.

Some people add to the water brandy or whisky; this is worse than useless—it is mischievous—it produces an irritation of the skin, and as it evaporates with more rapidity than water, it will aid in the abstraction of the animal heat. We have stated that heat is indispensable to infants, and for this reason there should be no current of air about the child while it is being washed, because it promotes evaporation.

SECTION II.

OF THE DRESS OF THE CHILD.

THE dress of a child should always be arranged and adapted so as to secure its comfort, health and growth, or development, and these ends cannot be answered without a proper temperature, and an entire liberty of motion in every muscle it has.

The practice of swaddling children, which is still in use in some old communities and countries, for they are always the least progressive, should be entirely abandoned. Dr. Dewees thinks that this practice probably originated in the deformity

which rickets produces, mistaking an effect of a disease, for a fault of nature. This opinion, however, we think to be erroneous. For some of our Indian tribes practice it to secure to the child what they conceive to be a proper form, and in Turkey, the midwives swathe the heads of infants into that shape which best suits the turban. No matter how it originated, it is a vile and mischievous practice. If every species of the inferior animals can obtain their proper form without swaddling, what reason can be assigned why the human progeny should not ! Is it not very probable that if the young greyhound or buck was so swaddled, when young, that he could not use his limbs, that he would not exhibit that activity and grace of motion which distinguishes him in age ?

If its inutility, in this respect, was the only objection to it, we might tolerate its use to gratify those simpletons who desire the practice of it ; but the mischief it does, beside the suffering it inflicts, is too great to admit of justification in a single instance. Dr. Dewees thinks that, inasmuch as the child was bound up in the smallest possible compass, it ought to have entire liberty after it is born. We admit his conclusion as a *fact*, but we have no sympathy for the child in consideration of the cause he assigns. If the condition of the fetus had been uncomfortable, nature would never have adopted such an arrangement. It may be well questioned, whether the fetus is capable of pleasure or pain—comfort or discomfort—but to the question.

So far as comfort is concerned, let any one confine his limbs in one position for an hour or two, and he will *know* something of the suffering which the child must endure before the faculty of motion can become adapted to such a condition of the muscles. But if this terminated the mischief of the practice, it might be suffered. It is well-known that the exercise of the muscles facilitates the circulation of the blood, and consequently, strengthens both the heart and lungs ; furthermore, it is well known that in atmospheric or animal life, a part is not developed unless it is exercised, on the contrary, it decreases. A child thus swathed may get fat, but fat performs no function—it is not organic development—it gives capacity to neither body nor mind.

Exercise, to a child, is as indispensable to its health and

development, as it is to an adult; consequently we contend that it should have entire liberty to throw its little arms and legs about, whenever it may be impelled to do so, by its faculty of motion—motion was the means provided by its Creator for equalizing and expending the nervous accumulations of the animal system. Mothers have too much attachment for their infants to deny them this privilege, after having been caused to observe how much they enjoy it.

After providing for the liberty of the child to kick and scratch as much as it pleases, we proceed to the consideration of its clothing with reference to its comfort and health. Non-conducting substances, such as wool and silk, should always constitute the under clothing during cold weather. Its shirt should be white silk or fine white flannel, we say white flannel because it is always softer than the red—because it is warmer, in having less power to radiate caloric, and because, for the sake of decency, the mother will be induced more frequently to change it.

As flannel and silk are preferable to other fabrics only because of their non-conducting power, it follows that they should be used only when it is requisite to retain the temperature of the child; but when the weather is warm and the child uncomfortable from a too great retention of its animal heat, the flannel should be replaced by cotton or linen, and, as a medium, between the two extremes of temperature, a cotton fabric, known as canton flannel, is excellent. What the writer has said upon the utility of flannel, has been more upon the authority of others, than from his own convictions, growing out of his experience; with himself, he has found the cotton fabric, above named, far better for him than flannel, and he is decidedly of the opinion, that it would be better for most persons, and even for children. In the case of infants, however, a woollen frock should succeed the canton shirt.

Dr. Dewees teaches that when the flannel becomes uncomfortably warm to the child, it should be removed, and that in case the weather changes to a colder temperature, it should be replaced; in fine, he thinks that it should be used and disused as indicated by the thermometer; we think so too, but not as an under garment. If flannel be used as a shirt, it should be put on in the fall and taken off between the first and the mid-

dle of June, and its removal should be in the morning ; but no matter at what time, or under what circumstances it be dispensed with, the child will be liable to take cold. The impossibility of changing the undershirt of a child, without a hazard to its health, constitutes the great reason why we would recommend the cotton flannel—it can be worn all the year, while the comfort of the child can be regulated by a change of its other clothing.

If fever should supervene during the period that the child wears flannel, we agree with Dr. Dewees, in recommending its removal upon the accession of the fever, and its replacement at the close of the sweating stage ; under such circumstances there is no danger that the child will take cold.

The following quotation from Dr. Dewees, we think, is pregnant with a flagrant error, and if the duty it inculcates were strictly observed the mischief would be very considerable. He says, “ Examine the skin of a new-born child, and you will find it almost constantly cold, unless well protected by clothing made of materials which are bad conductors of heat, and hence the *absolute* necessity of maintaining this condition by suitable means.”

The remarks apply with equal truth to all women of a rather full or lymphatic habit who are not accustomed to laborious pursuits, and yet they are perfectly comfortable, and the use of such means as would keep their skin warm would render them exceedingly uncomfortable.

In the month of August, when the temperature in the shade is nearly that of blood heat, when the child would be perfectly comfortable without any clothing, when removed from a current of air, its skin will be found to be cold. This coldness of the skin, then, in neither women nor children, indicates a want of clothing. Such women as we have indicated are rarely seen to perspire, except upon such portions of their surface as are so bound by their clothing as not to admit of insensible perspiration ; and the same remark is true of infants. This coldness, then, results from cutaneous evaporation—the ready means which infants and such women as indicated, have of parting with their superfluous animal heat—it is their means of being comfortable in hot weather.

Infants do not perhaps, nor in health maintain, a high

temperature, but to this end the mother's milk contains more sugar than that of any other recollected animal, and such is the constitution of the subcuticular substance that they readily part with any excess they may have, by insensible perspiration and evaporation, and when they are seen to sweat, the cause exists in fever, in a room insufficiently ventilated, or in too much clothing.

There is sometimes an unconquerable incompatibility between flannel and the cutaneous surface of some infants; it may be detected by the child's constant expression of uneasiness, and even fretfulness, without any apparent cause, and by an efflorescence spreading over the body, which disappears by a removal of the flannel.

Up to the time when the child begins to crawl, it matters nothing how long its frocks may be, provided they be not so twisted or tied about the feet as to restrain any variety of motion; but when they begin to crawl, which is generally about the eighth month, they should be so short as to allow it an entire freedom of its feet and ankles. Long clothes, by causing it to stumble, or by causing a feeling of restraint, beget in it a fear to make an effort, which greatly retards its industry in efforts at motion. A mother's vanity in the appearance of her child very frequently retards its prosperity; but they should sacrifice their vanity upon the altar of the child's utility.

As soon as it becomes expedient to shorten the child's dresses, its feet and legs should be dressed in shoes and stockings, especially in cold weather. It is of the first consideration to keep the child dry, which, from the nature of its wants, will require very frequent attention. It is true that some people, and even teachers are not very fastidious upon this subject, maintaining that the wet and cold to which the child is exposed by the nature of its excretions, will only tend to strengthen its constitution. Nature's plan for strengthening the constitution is by the use of nutritious and digestible food, and sufficient exercise of the body in the open air, when its condition is neither too hot nor too damp. It is of advantage to no animal to be either wet or cold, except to the cold-blooded.

A little investigation of this matter will expose its absurdity. We have maintained the propriety of keeping the child warm, for the promotion of its digestion, secretion and devel

opment; now what must be the effect of wet clothes upon it. The damp or wet clothing reduces the temperature of the child by combining with its caloric to the formation of vapor, and thus the clothing is finally dried at the expense of its animal heat. Under such a circumstance the child must be exceedingly vigorous if it do not seriously suffer. The three great functions which are promoted by a high temperature, must become less perfectly performed, and that too, as a matter of course, at the expense of the child. This is not all, the skin of the child may absorb a portion of the matter which it had excreted as unfit for any purpose in its economy. Nor is this all, so long as the wet clothes are in contact with it, insensible perspiration will be arrested, and thus other matter which would have been excreted is retained to answer no other purpose than one of mischief.

In the face of these consequences of wet clothes upon a child, how is it possible that one would permit a wet diaper or other clothing to remain upon it for a single moment? Even hogs will not lie down in their own excretions; then worse than hoggish must be the decency of those who attempt to justify it in children. In securing the child's clothes to its person tapes should be used in all instances of the usual fastenings, so as to exclude, as far as possible, the use of pins, and more particularly the small ones, for under the best care, they will sometimes prick the child; and being handled and nursed by other children of more age, they are certain to do it, and above all a needle or headless pin should never be used, because of the danger of becoming entirely introduced into the flesh of the child. The serious injuries which young children have received by them should be a sufficient admonition to mothers and nurses for all time to come.

There is yet, to the infant, an indispensable article of dress which claims from us a few remarks, it is the navel or belly-band:—its use is twofold; it sustains the walls or parietes of the abdomen from unequal and therefore injurious distension, in paroxysms of coughing, crying, and sneezing; its other importance is admitted by every woman, though she may not very well understand its philosophy. The umbilical cord, consisting of vessels passed from the inside of the fetus through the walls of its belly, and thus connected it with the mother,

and through which it was nourished and sustained by her, is divided, and most generally the hole into the belly closes quickly and strongly, but sometimes it does not, and the child is exposed to the danger of rupture of the bowels, or a portion of the caul or omentum, in an effort of coughing, or by some other improper motion of the abdomen.

To prevent the possibility of this rupture, the belly-band has been used from a time more remote than any written history; and the more certainly to secure, as it is supposed, the child against this accident, it is generally applied so tight as to create the same mischief through other openings of the belly, as those into the groin, and into the scrotum of the male.

The belly-band should be worn four months, and even longer, if there be any obvious tendency to rupture at the navel; and to avoid producing a rupture at any other point, it is obvious that the band should not be drawn so tightly as to contract the cavity of the abdomen. In other words, the whole object of the band is to keep the abdomen, in defiance of all the motions the child may make, in its normal condition, and to secure this end, the band should be so elastic as to adapt itself, more or less, to the motions of the belly; and to answer this purpose a single piece of flannel, and if cut obliquely across its structure, so much the better, may be applied around the body two or three times.

A few words more upon changing the clothes of children, and we conclude this Chapter. It is a wide-spread opinion that the frequent changing of dress in children, is detrimental to their health, and in confirmation of the opinion we are confidently referred to the chubby red-faced children of filthy hovels. It is proper to remark that the appearances of these children do not indicate, to a physiological observer, the existence of a good constitution—their condition is one of grossness—of plethora, and hence their liability to loathsome and fatal diseases.

The frequent changing of the clothes of children, if they be imperfectly dried and ventilated, will be attended with mischief; but the keeping of children cleanly clad, other things being equal, is indispensable to the founding of a good constitution. But to filthy clothes there are obviously great objections. To make ourself understood, conceive a diaper,

which has been wetted five or six times, dried and replaced, and then to the question, is it mechanically fit for the child? will not its roughness and stiffness irritate and even excoriate the skin? Let it be further remembered that it is stiffened by substances which were eliminated from the system as being unfit to be used in its further development, and when they are again dissolved by the next wetting the child gives it, they are in a proper condition to be absorbed by the already chafed parts to which it is applied. To feed the child upon its own excrements, to use strong language, would not be more improper, because the one is equivalent to the other, except perhaps, as to quantity.

SECTION III.

OF FEEDING THE CHILD BY THE MOUTH.

In the fourth Chapter we have shown, we think, beyond the possibility of a doubt, that there is no food so compatible with the health and development of the child as the milk of the mother, except when contra-indicated by strong and cogent reasons. We have shown the almost numberless dangers to which infants are exposed by being confided to the care of wet-nurses, and to the remarks which we have already made, we will here add, that we hold any mother to be culpable who permits any other mother to suckle her child, even for one time, which is nevertheless a common practice in the round of female visiting. The child of one who is simple in all her habits, will certainly suffer from the milk of one who is luxurious in her habits. But further than this; how can any one mother know the constitutional peculiarities of another? In every such instance, though it be one of courtesy, the mother exposes her child to a hazard.

Notwithstanding all the arguments that can be used in favor of a mother nourishing her own child, it does frequently happen that she cannot do it, and it does as frequently happen, that a wet-nurse cannot be had, and yet every dictate of parental fondness and of humanity declares that the child shall be

nourished ; and that too by food, which, as regards the child, may be considered as artificial.

The lacteal glands of some women do not make provision for the support of the child as soon as it is born, or even within several days. It becomes our duty then, in the meantime, to provide for the child an artificial food, which shall as nearly as possible, resemble the milk of the mother, under such circumstances ; which is done by mixing two-thirds cow's milk, one-third water, and then sweeten with loaf-sugar. Upon this the child can be sustained until the mother's milk shall come, and even afterward, if she do not produce enough.

Other teachers, under such circumstances, recommend, in view of making the food more nourishing, the boiling of the pulp of biscuits in water or fresh milk. We object to it, because it and every other variety of farinaceous food, is liable to, and usually does, ferment—become acid, and produce flatulence, colic, the iliac passion and death. Some recommend panadoes and gruels, seasoned with sugar, spices and wine. As there is neither spice nor wine in the milk of the mother, no other argument need to be adduced to prove the use of the two latter to be injudicious and consequently hurtful.

There are others again, who would so far simplify the food of infants, as to deny to it the use of sugar. With this prohibition, how is the system of the child to furnish its requisite animal heat ? We desire in all things to make nature our guide,—we have neither the folly, the pride nor the vanity, to believe that we know better than she, as to what is best. She has put into the mother's milk more water and sugar, than she has into that of the cow ; and she has made the mother's milk the best food for the infant, hence when her milk is not to be had, we feel commanded by her to make, by the mixing of other substances, as close an imitation of it as possible. We do not pretend to say that the substitute which we recommend, as much becomes the condition of the child, as the mother's milk would—it sometimes produces evil consequences, as flatulence, colic, etc. ; but these evils can be greatly reduced by giving a proper care to attending circumstances.

The most important of these circumstances is, that the milk should be from a healthy cow, and one that is not entirely fed upon slops, nor one that is constantly confined in a close pen,

nor yet from one that is greatly reduced from the want of food ; in fine, all the circumstances connected with her should be compatible with health and vigor. All that we had to say about wet-nurses, applies now to the cow. As such milk as we are now recommending can but rarely be had in our cities, we have one great cause of the mortality among city children.

Furthermore, the milk should, if practicable, be always taken from the same cow, and mixed with warm, sweetened water, and fed to the child fresh from the cow, and it should not be made sweeter than the mother's milk. As these rules cannot always be observed, we will add a few others to meet contingencies. If milk cannot be had fresh from the cow when wanted, it should be kept cool, either by the use of ice or a frequent change of cold water ; it should never be skimmed, nor should it be heated over the fire, as there would be constant danger of scalding it,—the one-third water that is to be added should be made hot, which will warm the milk, and if this is not always practicable, a sand-bath should be used.

It is proper to observe, furthermore, that the mixture should be fed to the child as soon as made, and that no more be made upon any one occasion, than it will take in a short time. If the milk at any time should exhibit a tendency to acidity, it should not be used, for no reliance is to be placed in the prevailing opinion among women, that a little more sugar will correct the evil, while in fact, the sugar, whether little or much, only increases the evil under such a circumstance. So far as the child is concerned, the milk is ruined and cannot be restored.

There are two practices in society very prevalent, which, though not injurious when the mother is the agent, are nevertheless disgusting, but when other persons are the agents, they may prove highly injurious. We allude to the nurse passing the child's food through her own mouth before giving it to the child, and of blowing upon it to cool it. Time should always be allowed for the atmosphere to cool the food, and children should be taught to await the process. If this were practiced upon all children it might aid the American people in finding time enough to take their meals.

But to refer again to the disgusting practice above-named,

what security can the mother have that the saliva of the nurse will not poison her child? Safety and decency both demand the abandonment of so filthy a practice. But we are told that the child cannot chew its food. We answer, that whenever its stomach is ready for such food, it will have teeth to masticate it. If people could only learn to observe nature's arrangements what an infinite number of blunders they would avoid.

We are admonished by highly respectable teachers, not to feed children with food that is too warm, because it may burn the mouth and will relax the coats of the stomach. The first part of the admonition was uselessly given, because there is no nurse so silly as to burn the child's mouth; and if there be any truth or probability in the second, we should profit by it, and apply cold cloths over the region of the stomach, or give them ice water to promote digestion when it is feeble.(?) To assert that warm blood in the arteries relaxes their coats, would indicate as much common sense, or as much knowledge of nature's arrangements, as to assert that warm food, or such as a child can swallow, because of its temperature, or of any other temperature below scalding, will relax the coats of the stomach.

On the contrary, digestion is promoted by warm food and drinks, and by all other means of increasing, in a healthy manner, the temperature of the stomach, and after feeding there is nothing more grateful to the child than the application of a warm hand or a warm flannel and gentle friction upon the region of the stomach. Nor is this all; it is better for the child, after feeding heartily, that it should be kept awake, provided it can be so exercised as to increase its temperature, than that it should sleep.*

It has been clearly shown by experiment that digestion is promoted by an increase of temperature, over and above that

* It is better at all periods of life, that after feeding, the mind should be agreeably amused and the body exercised, but not to fatigue. Of this truth we have become convinced from both observation and experience. The writer studies from six o'clock in the morning, in summer, to dinner, no matter at what hour it comes—after dining he follows some kind of manual labor for three hours, and then returns to his study, and even then, in consequence of imperfect digestion, his drowsiness sometimes drives him again to labor, before the close of another hour. He has thoroughly tried both this and the sleeping practice, and has found the former alone compatible with his health and his duties.

of 98° , or blood heat, and it is equally well-known that exercise, avoiding fatigue, will elevate the temperature, and that during sleep it will fall to 96° , and even lower ; hence it is obvious, in view of these facts, that it is better to exercise than to sleep after eating.

It is well known that students of medicine, particularly those who have been accustomed to active habits, find it very difficult to give attention to the afternoon lectures—they desire to sleep, and sleep may be taken by those who have a strong digestive system, but those in whom this system is feeble should not indulge,—they should exercise in something that will amuse the mind, consequently it would be wise in them to unite in clubs and employ a fencing teacher, to exercise them for one hour after dining. By this course they would improve their digestion, their health, and at the same time acquire such a command of a walking-stick, as to defend themselves successfully against dogs and those bipeds who use dirks and bowie-knives.

Infants at the breast, in general, spontaneously stop when they have fed enough ; but when otherwise fed, they cannot judge so well, and hence they are very liable to feed too much. This circumstance should command the particular attention of the nurse, otherwise the stomach will sometimes be painfully distended, which will most probably be followed by colic or diarrhœa. There is but little doubt, that the great majority of cases of diarrhœa in children arises from over-eating, along with too much heat. If this were not so, why are we more subject to bowel complaints in summer than in winter. In summer, the less exercise, of an excessive kind, we take, the less will be the waste, and the less the demand for food ; and, as a result, the less liable are we to bowel complaints.

CHAPTER VII.

THE NURSERY.

INTRODUCTION.

THE normal activity of the various organs and systems of organs of which our bodies are composed, are followed by agreeable sensations, or constitute what we call enjoyment or happiness, and as this activity promotes the development of all the parts thus active, by adding to their magnitude and strength, and by increasing their facility of action, it follows that every person who is able and properly considers the importance of the subject, appropriates a part of his mansion to the purposes of his children, which is called the nursery.

In its arrangements, then, it should be adapted to all of the important functions, and their most normal modes of manifestation, as rest, digestion, respiration, circulation, and of course, voluntary motion, domestic, intellectual and moral emotions, and social amusements. To answer all these indications it follows, that the nursery should not consist of some, otherwise, waste part of the house, nor of any indifferently circumstanced portion of it, but of such a portion as will answer the great purpose for which it is, or should be intended, namely, the production or manufacture of the future mothers, fathers, scholars, soldiers and statesmen of the commonwealth.

We never witness the attentions which are bestowed on horses that are intended for the turf or for the perpetuity of the species, without a feeling of shame for the human race. Every natural ordinance that holds relation to his physical and mental constitution is infracted or disregarded in his youth, and yet, in future life, his want of intellect is taken advantage of by the sharks of society, and if his moral manifestations

shall discord with the standard of society, punishment is substituted for that training which he ought to have had; and if his physical system is too feeble to discharge its required functions, he is pitied and looked upon as one upon whom his Creator has frowned.

Every animal pursues that course which was prescribed for it by the Author of its existence, except man and those over which he has exerted his supremacy. He disregards that cause—insults all of its ordinances—suffers in his own person or in that of his progeny, the consequences—repines at his misfortunes, and finally refers them to either an unkind or a very mysterious providence; but never reflects upon his own disobedience to those institutions which were intended to secure to him health, happiness and prosperity.

SECTION I.

LOCATION AND CONSTRUCTION OF THE NURSERY.

Having in the preceding introduction indicated the paramount importance of a family nursery, we shall, perhaps too briefly, treat of its arrangements, and indispensable provisions.

It should consist of at least two rooms, one for rest and one for exercise. This arrangement has many advantages beside those indicated; it allows the superintendent the opportunity of having both alternately ventilated and thoroughly cleansed without any exposure of the children to cold, wet, or dust, and the last, is by no means a circumstance of trifling importance to young children, when we reflect upon the great delicacy of the lining membrane of their lungs and their inability to protect themselves as grown persons do, or to help themselves by coughing. The mischievous influence of cold or wet chambers to all persons, and much more to children, is too well known to require any comment from us.

The floors of these chambers should be very tight, and the house so constructed as to admit of a free circulation of the air under them. No matter how tight the floors may be, if damp air and moisture exist under them, the chambers will be rendered more or less unhealthy. They should be tall, and in every respect sufficiently capacious to admit of all the

purposes for which they were intended, without crowding or cramping their delicate inhabitants.

The windows should be large, and so protected by cross-bars that the children cannot get through or fall out of them, and the outside doors should open on a piazza, which will tempt them, in good weather, to play on it in the open air; one on each side of the house would, most of the day, furnish them with a shade as might happen to comport with their feelings of comfort.

Their walls should be exposed to a clear influence of the rising and setting sun; the former to dissipate all dampness from the house, and the latter to prevent the early damp of the evening and through the night, by the radiation of the walls and all neighboring objects, of their acquired temperature. On the south-east, south and south-west, the house should be greatly protected from solar influence by shade trees, so trained as not to obstruct a free circulation of the air around and through the house, when desired for ventilation, and to cast their shadows upon the house above the windows. In every hundred house-groves in this country, which might as easily have been rendered beneficial, there are but few which are truly beneficial and healthy. Shade trees should not be so arranged and trained as to heat the house, dampen the air or prevent a free circulation of the air, but to serve, simply, the purpose of a cloud, to keep out the direct rays of the sun; and also for another and by no means an unimportant purpose, the absorption of the carbonic acid gas thrown off by the children and all other sources of it about the house, and, also, perhaps, other gases, which are not necessary to, but possibly injurious to, animal life. Shade trees and other vegetation, furthermore, invigorate the atmosphere by an evolution of oxygen.

This appendage of the nursery is too important to be passed over as merely one of its comforts. As it is, on the score of health and life, as important as anything that can be said upon the subjects of food and drink, it is important that we should make it so appear. By medical writers there is much said about miasma, so much that it is now lisped in the streets by those who do not understand even the meaning of the word.

We have not the time, and if we had, this is not the place to enter into a discussion about it; nevertheless, it will negatively appear before we have done, that it is as destitute of truth, as the proposition is, that two and three make four.

We have lived in the south, and while there, our faculties of observation were never idle on this subject; and without entering into the philosophy of it, we will simply make two statements of fact, which we trust will prove sufficient for our present purpose, which is, to induce all persons to plant shade trees, if they have not, and to prevent the felling of the forest, in future, where dwellings are to be erected.

A brother of the writer settled in one of the best cotton districts in Mississippi, and as far as it was the best, so far was it the more sickly and fatal to both the white and black population. At his solicitation we instructed him to select for his residence and that of his quarter, a dry piece of ground, well timbered, and to pay no attention to the vicinage of ponds or swamps, but to be careful to have a quarter of a mile of timbered land between his residence and his cotton plantation, and not less than one hundred yards between it and his garden; to remove the under-growth from several acres about his mansion, but to be sure to leave enough timber to shade, thoroughly, the surface of the earth.

Under these instructions he located his mansion in a quarter of a mile, or about midway between his cotton on the south-east, and an overflowed swamp of several thousands of acres of a lunated form, bounding him on the N. E., north, and north-west. There was a pond of water filled with logs about sixty yards south of his house, which furnished his stock water, and washing water for the quarter.

Thus circumstanced, he lived seven years, without having a single case of, the so-called, miasmatic disease, while, on all sides of him, sickness and death prevailed every summer and fall. At this time, believing that his quarter had become so acclimated as to be in no danger, and not comprehending the philosophy of our instructions, he felled a hundred acres of his forest to the west of his quarter, and up to the yard fence that surrounded it, and planted it the next spring. In the course of the summer, every negro he had, except one, who was about

sixty years of age, was sick, and so much so, that he did not make more than half a crop.

Now a question: Could none of the miasm get from his cotton field, through the open timber, to his quarter during the preceding seven years? could it have no influence upon them while working in the field? could they bring none of it home with them in their clothes? could no strong winds blow it from the swamp or from the cotton field in defiance of the *vigilance* and absorbing powers of the forest?

In traveling, we put up for a night with an intelligent Virginian, some three miles east of Vicksburg, and as we approached the house we discovered that his quarter was in the midst of the cotton field, and the cotton growing up to the doors of the houses. After some general conversation with him, we inquired, Whether his quarter was not sickly in the summer and fall? He answered, that it was considerably so, but not more so, perhaps, than other quarters about there. (This was probably the fact, as all the quarters were more or less similarly circumstanced.) But my question interested him—it involved the value of his property, which induced him to inquire why we made the question. We answered, with a full explanation of our reasons, and concluded by observing—“You have a handsome ridge of timbered land on the opposite side of the road, and if you will move your quarter into it, without felling a single tree, unless it should become necessary in planting the houses, you will save doctors’ bills and negroes.”

As people generally are so much disposed to regard all such notions as mere speculation, we had very little expectation that he would ever move the quarter. Some three years afterward, while at Vicksburg, we were invited to an in-fair in the country, by some of the friends of the family—we had no idea of the family, nor of their residence; but upon arriving at the house, we recognized the proprietor as the one with whom we had spent a night, and to whom we had given instructions about his quarter. After our introduction, we turned our eyes to where the quarter was, and found that it was not there, but upon turning a little more we discovered it on the ridge, in the timber. Being now anxious to learn the result

of the change, we turned to him and said, "I perceive that you have moved your quarter." He answered very indifferently, "Yes." I then inquired, "Have you discovered the change to contribute materially to their health?" He answered as indifferently as before, "Well, I think it has been an improvement." I again inquired, "Do you recollect to have been advised, about three years since, to move your quarter to the ridge on which you have now got it, by a gentleman who had the benefit of your hospitality during a very unpleasant night?" Rising from his seat he answered, with apparently deep concern, "Yes I do, and I moved it; are you the gentleman?" When we assured him that we were, no one could have manifested more gratitude than he did—we could have been a welcome member of his family for a year. He then went on to remark that the reasons we had advanced, caused him to think that the suggested move might be of some advantage to his blacks, and he moved it, but he had no idea that the advantage would be as great as he had found it; previous to the move, and for one year after, he had employed a physician by the year, at a high salary, to attend his quarter, but that the first year after the move taught him that it was a useless expense, and he quit it; and that during the preceding two years, a physician had not been called to his quarter more than two or three times."

Now this quarter was separated from the old one by a distance of about one hundred and thirty yards, including a slip of timber about sixty yards wide. Did this slip of timber prevent all the miasm of the plantation from getting to it?

In our large cities, it is a very general opinion that the broad streets are more healthy than the narrow ones; and yet while we lived in Baltimore, and also in New Orleans, it became obvious to us that the streets which were so narrow that the sun's rays never touched them, except when on the meridian, and for this reason they were nearly always wet, were more healthy than the broader ones, and the broadest were the most sickly in summer and autumn.

To say that in the narrow streets there was no evaporation or decomposition to produce miasm, will not do, because, in cities, the streets become the channels of the wind, and it traverses all of them. Our observations upon the south

brought us almost to an undoubting conviction, that the white race can inhabit the tropics and work in the sun, if they will take all their rest in the woods.

It is fortunate, however, that while much can be said on both sides of the question, the facts themselves dictate the proper course to be observed, notwithstanding the disgraceful fact that medical men have recommended, and caused to be destroyed, the shade trees of a city, for the purpose of promoting its health.

We have said enough upon this subject to show that shade trees, properly trained, are not only an ornament to a mansion, but a protection to the health of its inhabitants; but if they be so protective to adults, how much more must they be to infants, whose skin and lungs are so delicate?

As regards the other boundaries of the nursery, the N.E., north and N.W., the sources of bleak, and not unfrequently disease-bearing winds, we would suggest that, if possible, they should be guarded or protected by other portions of the mansion.

From some remarks of Dr. A. Combe, on Infancy, some persons might draw conclusions adverse to the doctrines we have here presented. He says that "the close vicinity to the house of trees," should be avoided because they prevent ventilation, produce and furnish humidity. As it is possible for an atmosphere to be too dry as well as too humid, his objection to the presence of trees, when cultivated as we have instructed, is more than obviated. He also prefers an elevated situation; but as we have elsewhere taught, this preference requires many qualifications. In the abstract, it is true in no country, and much less so in the south than in the north.

SECTION II.

OF THE TEMPERATURE OF THE NURSERY.

It is recommended that the temperature of the nursery should be regulated by a thermometer, and kept equable and at about 66° to 67° Fahrenheit. We object to this doctrine, because it is unnatural, and consequently must produce mischief.

In nature, the atmosphere is not regulated by a thermometer, with a view to equality of temperature; we cannot be made to doubt that the external world is properly adapted to the conditions of our existence. If children are maintained in an agreeable temperature, both their lungs and skin will form a habit—a constitution precisely in relation to it; and therefore, when they become exposed to a lower or a higher one by any casualty, they will suffer. What else is it that makes a northern climate so pinching and even hazardous to a southern man? There are as many and as marked atmospheric changes south as north, but a cold day in the former, would be quite a mild one in the latter.

We must suppose that our Creator, in constituting the seasons and the atmosphere, was not indifferent to the well-being of the creatures which were to be subjected to them; consequently, we must suppose it to be beneficial to both infants and adults to be subjected to variations of temperature. Nature has amply provided both infants and adults, with the means of adaptation to variations of temperature. The same number of volumes of atmospheric air, breathed in a cold room, will produce more animal heat than in a warm one, because it is more dense. This would be sufficient, provided they were sufficiently fed, to compensate for all ordinary variations of temperature.

Among cold-blooded and hibernating animals, (and also with vegetables,) in the winter season, the temperature is always above that of the atmosphere a little, and as the one changes, so does the other. Making nature our guide in this matter as in all others, our conclusion is, that infants and older children, should be accustomed to considerable variations of temperature, but to go to the extremes is not essential, and should indeed be avoided.

The temperature of 67° is not low enough for the hours of rest, nor is it high enough for the hours of waking, in the winter. The freezing temperature has a happy tonic influence upon adults, if not endured too long, and that of 40° would have a similar effect upon young children. During the hours of waking and exercising there is too much difference between 67° and 98° or blood-heat, to enable the skin to perform some of its most important functions.

Summer-heat or that of 76° is too low for the comfort of an

adult, in a state of rest, it is at least 21° below blood-heat, which is too much to admit of comfort, more especially to children.

We do not advocate an unnecessary exposure of children through the usual plea of making them hardy, nor through any other ; and upon the other hand, we object to regulating the temperature of the nursery to equability by a thermometer, as we do that of tropical plants. A cold air is not to be particularly feared under ordinary circumstances, but a damp one should be guarded against at all times in cold weather, and by all persons, but more particularly by infants.

We would suggest that a fire should be made in the sleeping room about sunset and suffered to burn down—it will be warm enough through the balance of the night. During the day, in dry weather, the windows should be raised while cleansing it, and kept up for some time. The morning fire is now presumed to be nearly burned down, and if replenished, the windows should remain up, during the period it may be vacated by the children. The other room should be warmed, cleaned and ventilated in the morning before the children go into it.

During the season of cold weather, both apartments of the nursery should wear a woollen carpet, because of the greater conducting capacity of wood than wool, it is economy in fuel, and a protection against cold feet and hands and consequently against disease. Strong objections are urged against carpeting a nursery floor because of the great liability to which it is exposed to become soiled and wetted, and the difficulty of drying it. These objections are too easily remedied, to overrule its advantages. No matter how wetted, whether by washing out soiled spots with a brush or otherwise, the drying process is rendered easy by always having on hand a few quires of soft or absorbing paper. The application of a quire of this to a wet spot will speedily so far draw the water out of it, that the temperature of the room will soon dry it. During the summer season the floor may be uncovered or matted as may best suit the taste or wishes of the superintendent.

As to the best plan for warming a nursery, all things considered, is a question of much moment. An open coal fire, indeed a coal fire of any kind is objectionable, because it is

next to impossible, to avoid floating dust and ashes, and occasionally sulphurous vapors, which are injurious to the lungs. An open coal fire is objectionable because the children may fall into it, or have their clothes take fire; all things considered we would suggest a wood fire in a close stove with a capacious evaporating dish on the top of it.

SECTION III.

PHYSICAL TRAINING OF THE NURSERY.

As the preparation for the greatest achievements of our faculties must and should commence in the nursery, its provisions and management should be, to every parent and to every commonwealth, subjects of the deepest solicitude. The neglects or omissions committed here can never be entirely repaired—"early impressions are the most lasting," and, accordingly, early neglects and imprudences are the most irreparable. In view of these fundamental propositions, we shall be particularly careful not to teach anything which is not defensible upon well established physiological principles.

There is a pleasure in the expenditure of nervous and muscular energy through the waking hours, and there is a pleasure in the restoration of it, by rest, during the sleeping ones, and unless accumulations of it be effected during sleep, for expenditure when awake, the health and energies of the system must sink; the best means, then, of procuring rest, is, in point of importance, inferior to no other provision of the nursery.

Children should be trained to early resting and rising, and after the latter they should be washed, dressed, their minds amused, and bodies exercised for some time before receiving their food.

The utmost care should be taken to train them to regular habits—a proper time for rest, for exercise, for feeding and the voiding of their excrements. Dr. Dewees teaches that they should not be indulged in voiding their urine too frequently, as it will beget the filthy practice of wetting the bed. In this opinion, we agree with him, but not for the reason he assigns; it is occasioned by lying on the back, causing too much heat

and blood to be accumulated in the cerebellum. When they become one or two years old they should have a hard pillow, which will force them to lie upon the side—one made of cotton or rags. This practice of lying on the back is attended, at a later period of life, with another evil of great magnitude, the nocturnal and spontaneous emission of the semen, to the ruin of the constitution, if not timely restrained.

The first and great requisite of a nursery is a mother or nurse who possesses sprightliness, intelligence, and amiability—one who has so much self-government as never to betray anger in the presence of the children—one whose social and moral endowments render her a proper example to them; and lastly, one who has such intellectual resources as to be able at all times to vary or modify their amusements and exercises.

After breakfast, dinner and supper, the play-room should be a gymnasium for an hour, more or less; every practical means should be provided for the exercise of the children, particularly of their superior extremities. This exercise should be made a matter of indispensable duty. When this course shall become adopted throughout our land, consumption and many other avenues to a premature grave, will become rare events in society. The truthfulness of this conclusion no one can doubt, who will carefully consult our doctrines of the cerebellum.

During the first weeks, in the history of every child, it is too feeble to participate in the sports of the nursery, and yet exercise and airing are as essential to it, as to those of more age. These objects, to a considerable extent, may be effected by carrying it about through the nursery, and this should be regularly and punctually practiced every day. But to the usual manner in which this is effected there are some weighty objections. A vertical position to the body of the child should be carefully avoided, as the feeble spine has to sustain the weight of the chest and head. During early infancy it should be sustained in a nearly horizontal position upon a pillow, and thus carried about, or which is still better, to place it on a pillow in a convenient basket; in this condition it has liberty of motion, and can be carried about by any domestic.

The time was when no possible means were neglected to build up the animal machine, and similar means are

resorted to by many of our wild tribes; but now, in civilized society, while the animal is neglected, no efforts are spared to build up the intellectual and religious machine; thus forgetting that the latter cannot be usefully or happily effected without the former. The attempt is similar to placing upon a column a heavy capital when the foundation is feeble and unsettled. In our country this is the GREAT FAULT of the age. We have infant schools and Sunday schools and every-day schools for the cerebrum, but no other school than chance, which feeble constitutions are sure to neglect, for the development of the cerebrum or vital forces. In this condition of society we have discovered the great source of consumption, cerebral congestions, convulsions and many other nervous affections.

SECTION IV.

MENTAL TRAINING IN THE NURSERY.

We are now to speak of such training as the nursery should provide, which is to affect and materially to mould the future man or woman. It must be recollected, that the child is introduced into the world entirely helpless, and with scarcely more of what can be called mind, than is possessed by an oyster—barren of a single thought, and yet, as observation has clearly shown, it possesses the rudiments of all the faculties which, in future life, will be manifested. Over these rudiments we have not an unlimited control—we have to submit to an original determination of their constitution—to the fiat of nature, “so far canst thou go, but no further.” Within prescribed limits we can do great good or mischief, by retarding or promoting the development of these rudiments, and by properly or improperly directing the manifestation of their faculties. These faculties adapt him to the world in which he lives, and out of which he is to elaborate his happiness or his misery—his usefulness or his mischievousness. Some of his faculties are precisely in kind with those that govern and impel the brute creation, commanding him to kill that he may eat, to repel aggression, to shun danger and propagate his kind. As far as he has faculties in common with the inferior orders

of creation, so far are his pleasures or enjoyments like theirs—he has pleasure in eating, drinking, sleeping, and in the exercise of his voluntary muscles; and the great calamity in the present state of the world is, that a preponderating portion of the race is satisfied with these enjoyments, and will make no struggle to reach that superior sphere, where the social and moral sentiments, and the reflecting faculties preside, and secure to their possessor a large range of enjoyments, in which the animal world can never participate. They furnish his most exalted, his most refined, and his most impassioned pleasures; those, compared with which, his animal ones are as dross to pure gold. They introduce him directly to the great and ennobling purposes of his existence—obedience to the institutions of his Creator, and love for his fellow-men. They give him dominion over the earth, by being impelled by his animal wants, and aided by his powers of voluntary motion, to control a part of the stupendous whole that surrounds him, and to adapt himself to the balance in such a way as to render it subservient to his comforts and enjoyments. He can control the horse, the ox, the sheep and dog, and render them subservient to his wants and his pleasures; he cannot tame the lion and the panther, but he can destroy them; he cannot control the ocean, but by the use of canvas or steam he can ride upon its bosom, command its treasures, and the commerce of the world.

When children cry because of being uncomfortable or sick, they should be attended to; but when they do it as a means to obtain what they desire, they should never be gratified. If under such a motive, they are gratified in things to which there can be no objection, they look for gratification in those to which there may be serious ones. By teaching them to wait your time and pleasure, you cultivate their firmness and fortitude—they acquire the power of self-government, which is indispensable to happiness, to success, and to good-citizenship. There is in society no fault, no neglect so lamentably attended in its results, as this.

Every laudable means and useful temptation that can be devised should be resorted to, to make the children love the nursery, they should delight to be in it more than any other place. The common practice therefore, of using it as a kind

of prison or place of punishment, is very injudicious—it is far better to practice the reverse—take them out of it for improper conduct, which can be made very effective by a little address. Nothing should ever be done to children, which they shall conceive to be intended as punishment. When such a notion takes possession of them, obstinacy is certain to be engendered.

The nursery should be regarded as a community of miniature women and men, and should be influenced, as we do our fellow-citizens, by the use of adequate motives. They should never be commanded directly, to do anything, but politely requested. The tone of command is offensive to self-esteem, while a request is agreeable to approbateness and benevolence, and will very generally secure obedience. But suppose it should not, what then? Let the parent or superintendent address the offender thus: “We have politely requested you to do us a favor, and you have refused, now this is unkind and ungenerous in you, and a bad example to your sisters and brothers, and through a fear that you will spoil them by your example, you must leave the nursery.” This course can be variously modified so as to suit age and other circumstances. It is always better to tell a child that he cannot be good or dutiful, than to tell him that he will not; because of two reasons: under the influence of adequate motives he would have been good, but in the absence of them he was not, and by telling him that he cannot, you create a motive which induces him to show you that he can. It is an impeachment of his capacity, which is worse than a whipping. In the first instance, the sending him out of the nursery for the reason assigned, which was a correct one, you impeach his perfection—he is penetrated with an idea of disgrace, and most generally reformation is the immediate result. By these means, variously varied, one person can govern fifty children, and have obedience and good conduct, provided that that *person* possess patience, and self-government, and those who have not these mental requisites to a nursery, should never have the care of children.

As mental education commences spontaneously, at a very early period, and as exercise of all the members of the body is indispensable to health and future usefulness, it is obvious that a nursery should be supplied with inducements and facilities for the exercise of the intellectual faculties.

At an early period, perhaps at birth, an infant manifests consciousness, and soon after a spirit of observation, and as the faculties concerned in this function can neither become active nor developed to a proper extent without early and continued exercise, the nursery should be provided with objects of sense—such as will spontaneously attract attention. To the neglect of this culture, during youth, do we attribute a very large proportion of the vice, crime and idleness of society. This end can be achieved by supplying their rooms with drawings, paintings, and a selected cabinet of natural history. The presentation of one of these objects, will generally arrest that fretfulness which has resulted from animal irritability, whereby it is not only calmed, but instructed and rendered more intellectually able and effective. Of course, great circumspection will be needed in adapting these objects to the capabilities of the infantile mind. The lash, fretting and scolding are not to be tolerated, unless we really desire to teach those acquirements, with their attendant train of evils, to our children. This is getting to be understood better than formerly, but much remains to be learned yet.

CHAPTER VIII.

CAUSES OF INFANTILE MORTALITY.

IN the conditions incidental to infancy, in civil society, must we look for the causes of that infantile mortality which distinguishes many of our cities—a mortality that is not more astonishing, as a question of professional investigation, than lamentable to the philanthropist. In 1818 the entire mortality in Paris, (France), was 22,421, of which 3,942 were of infants under one year of age. In New York, as we learn from the tables compiled by Dr. Lee, comprising a period of sixteen years, one-fourth of the entire mortality consisted of infants under the age above-named.

In 1851, between the 21st of June and the 18th of July, the total mortality of Cincinnati was 650, and of this number 366 (considerably more than half), were of children under five years of age.* From the usual rates of mortality, as governed by age, we may safely infer that one half the 366 were of children under the age of one year.

Every writer which it has been our fortune to consult upon infantile forms of disease, enumerates nearly or quite all of the normal differences that distinguish infancy from adolescence, and treats of them as the predisposing causes of disease and death in the former, and thus the greater infantile mortality is accounted for. As a matter of fact, we do not believe this doctrine, and in not believing it, we will not, as a moralist or as a political economist, teach it.

We have upon several occasions expressed our faith and confidence in the provisions of the physical world for the very best interest of all its creatures. To us, every provision—every

* Eclectic Medical Journal.

law bears upon its face the impress of goodness and wisdom. Under these abiding convictions we are unwilling to admit that any provision of our Creator is faulty, or clumsily adapted to a wise and benevolent end. With these convictions, we must believe that the infantile brain, its envelopes and their relations to each other, with all the minor arrangements of the wonderful whole must be just as well adapted to health, to life and to an immunity from disease, under the circumstances of its existence, as the similar sum total of the arrangements with which adults are endowed. We cannot then attribute infantile mortality to any peculiarity of God's providence. We do not believe that it was contemplated by it, that any one should die before extreme old age—before the organization wore out, and the existing premature mortality results from the countless violations of its ordinances which have been progressing ever since man had an existence. The average of human life has much increased in the last thirty years, and it will continue to increase so long as there shall be an increase of obedience to the organic laws.

With reference to the great mortality of children, we must now give our opinion as to the causes. We have elsewhere remarked that all special attention to the development of the animal system has very generally ceased, and in its stead a very general one is given to the mental, which is always antagonistic to the animal, that is, it depends upon the animal for all its force and efficiency of manifestation, consequently one-half of the children that meet, thus, an early grave, are produced by parents who never possessed a normally physiological condition. Add to this prevailing cause, the morbid condition of mind that distinguishes New York, Cincinnati and many other cities, and the astonishing mortality of infants is accounted for.

We have but for a few days to observe the manifestations of New York and Cincinnati society, to feel quite convinced that the mental condition of one-half, is in a pathological state, consequently the children of all such persons are born predisposed to inflammation of the brain, convulsions, congestion and all those diseases which can result from an unsound brain, and an undeveloped animal system. Happiness is a stranger to one-half of the community, and pleasure is sought—

we mean passionate excitement. Some must go to night prayer-meeting at the hazard of property and children—some must be at the theater—some at the concert, some at the card table,—some at a political club—some at the masonic-hall—some at the odd-fellows hall—some at the tipping shop, and nearly all are impelled by a motive precisely similar in kind—abnormal or passionate excitement. Are parents in this condition capable of producing healthy children? It would be an unmerciful fate to doom infants thus conceived, carried and brought forth, to live more than one year. Parents who desire children must learn to maintain their systems in a normal state—a state of health and happiness, and in no-wise indulge a nervous anxiety for pleasure. If physiologists, philanthropists and moralists desire to reduce the present standard of infantile mortality, they must devote more of their attention to the social state—they must train society to live in conformity to the organic laws. Our clergy and editors, with the help of good citizens, can effect a complete revolution in ten years. But this work cannot be effected by removing evil institutions alone—in their stead must be erected useful ones—such as are devoted to art, science, literature and physical exercise—gymnastics—subjects that produce happiness and usefulness, without passionate excitement. As a morbid excitability is much less prevalent in Philadelphia than in New York or Cincinnati, we would expect a less infantile mortality.

The three great enemies of human life, in the United States, are politics, religion, and ardent spirits. From the first we have an unstable government, and many unhappy citizens; from the second, very many unhappy and restless Christians, and from the third, very many unsound bodies. We have, therefore, as a people, yet to learn the temperate use of our advantages. The very freedom of our institutions is pregnant with premature death. In countries less free, almost every individual has, by caste, bounds fixed for the hopes of his ambition; but here the humblest individual has as large a field for the play of his hopes, and exercise of his ambition, as those of a long line of successful and distinguished ancestry. Every one is born, yes, conceived, in a storm of excited and hopeful expectation and bred in a whirlwind of impassioned exertion.

In the American face is depicted irritability, anxiety and care—its pathognomy most clearly indicates that the comforts of life do not constitute the engrossing and all needful purpose of existence. Look at a European face, the Irish excepted, and what does it indicate? Very little else than a desire for roast beef and puddings. The natural expression is one of ease—of a fitness to enjoy existence—to make the most of it, and to be satisfied with it.

The great expenditure of vital force in the mental functions of the Americans, particularly those who populate our cities, so reduces the tone and vigor of their bodies as to incapacitate for producing a vigorous progeny. In view, then, of the existing condition of American society, no one who is acquainted with the organic laws, should be astonished at its juvenile mortality.

Some may say that this argument is not consistent, because juvenile mortality in European cities is as great as it is in the American! We admit it, and for the reason that there exists a state of society so low and dependent, that we have none to correspond with it—they are enslaved, ignorant and degraded—but here all are free and intelligent—death from absolute poverty has scarcely ever been witnessed in our country.

Thus far, in our investigations, we have had almost exclusive reference to children in a state of atmospheric or extra-uterine existence, and although there exists almost an entire personal identity between the fetus and the infant, yet they are intrinsically as different as a vegetable and a child; but notwithstanding this difference, mothers speak of their fetus, as their child, and as familiarly too, as if they had seen it or heard it cry; consequently we are called upon to drop a few passing remarks with reference to the intra-uterine *children*, more especially as physicians are frequently consulted in their behalf.

Fetal life and vegetable life present many striking analogies; the fetus is developed from nourishment furnished either by the placenta or the amnion, or both; and vegetables are developed by nourishment obtained from the earth or the atmosphere or both; the fetus manifests, so far as we can discover, no animal function—it may be diseased, and so may a

vegetable, but neither of them can be sick—both are incapable of suffering. Neither of them manifests an animal sense, nor a voluntary capacity. We may restore a diseased fetus by medicating the mother, and so we may a diseased vegetable, by medicating the soil, which is its mother.

Philosophically speaking, then, a fetus is not a child, nor can it become one without a greater supply of oxygen than the placenta was ever intended to furnish, but which, normally, is supplied after birth by the respiratory function. We have called attention to intra and extra-uterine life simply for the sake of truth; for the present it is only important for us to know that fetuses are still-born, because probably of disease, and that they are born with varieties of disease, of which they may die, or from which they may recover.

It is now, we believe, a settled doctrine that fetuses contract disease, of which they either die or recover, and these events may take place in either the intra or extra-uterine condition; therefore it is not required that we shall support the affirmative by evidence. Nevertheless, the fact that a fetus is diseased, or has been diseased and recovered, we cannot ascertain, unequivocally, till after birth; and if we could, it would, in the present state of medical science, prove of no therapeutical advantage.

We may be told by some, that by proper attention to the mother we may, in a great measure, ensure the fetus. We admit this as a postulate; but what are we to understand by a proper attention to the mother? In one instance a mother has the appearance of possessing fine health, and yet she has a half-developed, sickly-looking and feeble child; while another, who by the time her child is born, wears out all but the last thread of life, and that yields in a short time after, by struggling against consumption or some other fatal malady, and yet her child is fully developed—a fine picture of health! In both of these instances we would, *a priori*, have concluded just the reverse of what happened, and is known to happen frequently.

In Virginia, large tracts of land are thrown out of cultivation, as being unfit for the production of tobacco, corn and potatoes, but still it produces a thrifty forest of pine-trees. In the abstract, this land cannot be considered as exhausted, but so only, in relation to the vegetables before named. Hence, it

so appears, that some women are constituted to enjoy existence but not to produce children ; while others have but little physical enjoyment, but produce fine, healthy children. With reference to the land, chemistry has taught us how to remedy the evil ; but physiology has not done the same for us with reference to women. As yet the whole subject is enshrouded with darkness and difficulty. If we shall, therefore, do all that is properly indicated for the mother, considering her condition, we shall do all that we certainly can do for the interest of the fetus.

There is yet another physiological condition with reference to fetuses and children, which we deem too important to be suffered to pass unnoticed, though neglected or never thought of by any one else. It should be constantly remembered that during fetal life no animal function is performed—the fetus only vegetates ; consequently it is possible for one to be born well developed, and in a fine condition, because of a fine organic or vegetative system, but for the want of a more highly endowed animal system, it commences soon after birth to decline ; and thus, to an extent more or less, it happens, that life cannot be prolonged beyond one, two or three years, or possibly, in some instances, to seven. A large proportion of the mortality that happens among infants, during the first years of existence, results from this cause. On the other hand, another fetus has a fine animal system, but so feeble was the vegetative, at birth, as to appear almost impossible that it could live ; but it is soon discovered that atmospheric existence agrees with it, and it soon becomes a child of promise, and finally makes a strong and healthy man. This distinction is important, particularly as it indicates the great importance of early physical exercise to the former.

We feel entirely satisfied that we have satisfactorily accounted for the existing mortality of children, without any reference to those organic conditions which constitute infantile normality. Such is our conviction, from extensive observation and years of reflection, that all the arrangements of Providence are faultless ; and consequently we are much more disposed to look for the causes of social evils to social violations of the organic laws, than to any oversight or neglect in the plans of the former.

CHAPTER IX.

OF THE NECESSITY AND UTILITY OF JUVENILE MORTALITY.

It will, no doubt, appear very singular to many of our readers, that we should advocate such a doctrine as that which must be inferred from the caption of this Chapter, more especially in a work of this kind ; but when they have read it, and reflected upon it, we trust that they will agree with us, that it is neither out of time, nor out of place.

Our proposition when explained, is, that under existing circumstances of the human race, juvenile mortality, to the full extent of its natural causes, is both necessary and useful. That nothing less could result, and nothing less should result, or be even hoped for, by any good citizen.

Our readers have not yet to learn, we should think, that we unqualifiedly believe that all the arrangements of God's Providence are adequate to the very best ends of the human race; and consequently, we must believe that disease and death, and both, in accordance with all the circumstances that attend them, are wise and beneficial institutions. Believing this doctrine to be true, and therefore good, we have deemed it proper, as a physiological prophylaxis, to place its defense before the public, hoping that many may be admonished by it, to practice greater obedience to the organic laws, and thereby, in a manner compatible with the requisitions of Providence, lessen or reduce the present standard of human mortality.

We hold that the profession have been shamefully guilty of a dereliction of duty to the public, in having, to this time suffered it to continue ignorant of the great and paramount truths with which, it will be seen, this subject is pregnant. If parents had, long since, been made familiar with it, two

great and important results would now be exerting a salutary influence on society ; namely, in view of progeny, every one thus instructed would take more care, than is now thought to be essential, of his physiological condition ; and secondly : every one would meet the loss of children, by the ordinary causes of death, with that propriety and submission which become an intelligent understanding of its necessity. Such events would produce conviction that the organic laws cannot be infringed with impunity—such suffering parents would be penetrated with the conviction that their bereavement was just to them, and merciful to their progeny. Such information could rarely fail to produce a more vigilant obedience for the future.

How stands the case now, in the public mind ? All act as though all children should live, all desire that they should live, without any reference to consequences, and when they die, the event is referred to a mysterious dispensation of Providence—not a word is said to them by doctor or preacher to enlighten them upon the subject of their own unsoundness, or daily violation, in almost all they do, of the organic laws. They are not taught to look for the cause of their bereavement in the history of their own lives. If the bereaved be piously disposed, he inquires of himself, have I not kept the commandments ? have I not been charitable ? have I not been just ? Then why should such a dispensation fall upon me ? We answer, for the reason that you have not obeyed the organic laws. For all your obedience you will have your reward in kind, and for all your disobedience you will suffer a corresponding consequence in kind—the antecedent and the sequent are always related to each other in kind—if you sow tares you must not expect to reap wheat. Moral rectitude is not rewarded by an immunity from disease.

It may be considered as an undebatable, and therefore a self-evident proposition, that every animal or living thing was placed here to enjoy existence ; and if children leave their parents before they have enjoyed, to any conscious extent, existence, the cause cannot, legitimately be found in the arrangements of Providence. And if parents shall suspect us of a disposition to insinuate, that if their histories were properly investigated, the cause of juvenile mortality might be found ;

we will only say, that we would feel greatly enlightened by having the histories of all such. What a flood of light the profession might, in a few years, shed upon this subject, by making a record of the organic history of all parents, whose children die under five years of age. It would, we suspect, be found that a few had married cousins; many had married incompatible constitutions; many had married diseased ones; many dissipated in exciting amusements; many were in a constant excitement about their pecuniary liabilities; others, about their political prospects; some were gloomy for the want of business; others for having failed in business; and many were miserable because of discord.

Our whole purpose for introducing this subject, is, to make parents, and all who expect to become parents, think of the organic laws, to which they must render obedience, or suffer in themselves, in their children, or in both. We desire that it shall furnish a motive to individual and social improvement. If any have applied our remarks to themselves, the fault is not ours; we have followed the plan of Providence—we have aimed at the good of the race, and not at that of individuals.

With these introductory considerations, we proceed to an exposition of the truth of our proposition.

There is no principle in the dynamics of the natural administration of this world more obvious, more visibly displayed, or more defensible, than that the organic laws were so arranged, as to provide for the preservation of species, at the expense of individuals. The principle, furthermore, is illustrated by all nations, civilly, politically, and religiously. All communities cut off criminal individuals for the good of the many—the community; all nations lose thousands of their citizens in war, for the preservation of their political independence and privileges; and all religious associations expel irreligious individuals, for the purpose of maintaining the purity of the church. The least attention to the principle will show, that it is eminently philanthropic; and a little more attention to it, will we think, show that philanthropy is a more exalted virtue than either justice or charity. If we shall now show, that the good of the race—the species—is promoted by an extensive juvenile mortality, then we will have gained our point. In doing

this, we admit that we throw all the responsibility upon the parents—we take from them the consoling unction, that the fault was not theirs; although they may have loved their children, tenderly nursed them, and employed the most distinguished medical skill for them. Behind all this lies concealed their disobedience; and their children were taken out of the species, and as certainly for the good of the species, as that criminals are taken out of society, for the good of it.

Suppose any given number of children should take the small-pox, and all exist under equal circumstances, and one-third of them should die; would not the conclusion be, that with reference to this disease, that the two-thirds who recovered, possessed a more conservative, a more effective vital force than those who died? If this conclusion be admitted, then it follows, that some children have a greater constitutional tenacity of life than others, and that diseases are the proper tests of this vital force.

Children are the acts of parents, and their early death proves, *cæteris paribus*, that they were incompetent to stand disease, the test of vital force; or capacity to maintain existence, three-score and ten years, and consequently the cause is justly referable to the parents.

The fact is well known, that great longevity is peculiar to some families, and it exists in defiance of every variety of morbid invasion. We may speculate as we please as to the cause, but we will have to conclude, virtually, that it depends upon a strength of vital force which is capable of expelling from the system all causes of morbid action, until worn-out or exhausted by age. We are acquainted with a gentleman who had a severe attack of Asiatic cholera, in the seventy-ninth year of his age—he was self-willed—obeyed neither his physician nor any one else—he would have to eat and drink whatever his appetite desired; consequently he ate heartily of pickled cucumbers, and drank freely of buttermilk—no one expected him to live, and yet he is still living in the eighty-third year of his age, and apparently as able to sustain another attack of cholera as he was before. Now, we may inquire: What enabled him to live so long in the midst of epidemics that have carried off thousands of younger men, from immediately around him? Shall we not attribute his present existence, under all

the circumstances by which he has been surrounded, to the superior integrity of his vital force?

The principle that aims at the perpetuity or preservation of the species, is strongly exemplified in various conditions of human society. In hospitals and prisons, where very many are crowded together—too many for the health of all—so many that all will perish without a reduction of their number, a cause of disease is generated, which fells all but the few whose vital force can resist it; and thus at the expense of many, a few are spared to preserve the race. Did not these few possess a stronger vital force—more power to resist disease than the others?

In old and dense communities, where vicious habits, outrages upon the organic laws, have become so extensive as to render enfeebled a large proportion of the population, a poisonous epidemic makes an assault, carrying off all whose vital force cannot resist it. Can any one be so stupid as not to perceive in this, not only that the survivors possessed a stronger—a more resisting vital force, but also an immense advantage to the cause of human existence, as a species? Those who escaped, possessed the requisite vital force to become the progenitors of a vigorous posterity.

It will, we think, be perceived from what we have said, that disease is the test of vital force; and consequently the younger a person dies, the greater the defect in this essential of existence. When, therefore, we contemplate epidemics—disease in general, with a proper philosophical spirit—it becomes apparent, that it is not only the great avenger for sins against the organic laws, but is indispensable to the aggregate of human life; and that without it, the species would become extinct, through the degeneracy of vital organization.

Horticulturists select the seed of their various crops from the most developed and vigorous plants; and yet some of the seeds will have a feeble vital force, indicated by the feebleness of the plants they produce, which he extirpates from the soil. Does not DEATH perform the same important function in the garden of human life? He destroys its plants in their youth—he does not allow them to produce seed, and in so doing, he preserves the species in that condition which is adequate to a perpetual existence. We have frequently heard it said, that

epidemics were, no doubt, wise and profitable dispensations of Providence, but inscrutable to man. We admit the first, but deny that their purpose is inscrutable—indeed, we think that we have made their purpose so plain, that the most ordinary intellect can understand it; and in understanding it, the presumption is, that it will admonish all to become more acquainted with, and to practice a greater obedience to, the organic laws.

If disease was intended to test the vital force, and to cut down the feeble in their youth, some may be disposed to suspect that it is useless, if not improper, to attempt to save those who may be thus assailed. We should come to no such conclusion. In very many instances the vital force is nearly equal to the disease, and with a little judicious aid, would overcome it; and then by proper culture, the former may be so strengthened, as to contend with epidemic and other causes of disease, even to old age. And in cases where the vital force is sufficient to overcome the disease, it must be perceived, that a little injudicious meddling may reverse the relation, and then death must supervene.

A few illustrations will render this principle obvious. Suppose a case in which the vital force is inadequate to the removal of the disease, it is clear that by rendering a little judicious aid to the former, in removing impediments and equalizing its forces, it may obtain a sufficient ascendancy.

Suppose again the disease to have resulted from epidemic poison, and that the vital force is adequate to its removal; but as the friends do not know this, a physician is sent for. Upon his arrival, he finds a high degree of febrile excitement, and mistaking it for the disease, and a very general mistake this is, he bleeds the patient. Does he not, by this act, reduce the vital force? Suppose again that he gives a purgative; will it not also reduce the vital force? And lastly, suppose he gives mercurial alteratives; does he not add to the labor of the vital force, by introducing another poison? In view of these mistakes, and they are the prevailing practice of the age, is it strange that the patient should die? would it not be strange if he did not? And yet in first class constitutions, the vital force is frequently able to contend with both the disease and the doctor.

In review of the prevailing practice, we feel justly called upon to attribute a large percentum of the existing juvenile mortality, to the medical profession. When the febrile symptoms, in any given case, run so high as to induce those who maintain that fever is disease, to bleed and purge; they would induce us to believe that there was present, vital force enough to save the patient, consequently we are inclined to hold that branch of the profession responsible for every instance of mortality, that supervenes such a practice.

This question we shall discuss in the next Book—it has incidentally come up here, in our purpose of showing to what extent the existing juvenile mortality, is indispensable and useful in the consummation of the great purpose of Providence—the preservation of the species.

In the preceding Chapters of this book, we have labored to enlighten our readers upon the subject of their duties to themselves, with reference to children, and of their duties to their children in view of life, health, longevity, usefulness and happiness; and in conclusion, we conceive it to be our duty to make an exposition of the necessity, utility and philanthropy of that mortality which results from their neglect of those duties.

If, in the discharge of this duty, we have inspired in some, a desire to become more extensively informed with reference to the laws by which God governs his physical Providence, we advise them to read, and to study the “*CONSTITUTION OF MAN*” by George Combe, Esq.,—the works of Gall, Spurzheim, Cox, Simpson, Andrew Comb, M. D., and other later writers. If the public will not read such works, at least we may hope that physicians, whose mission is the care of life, will not neglect them.

B O O K I I .

THE NATURAL HISTORY, PATHOLOGY AND TREATMENT
OF THE VARIOUS FORMS OF DISEASE INCIDENTAL
TO INFANCY AND CHILDHOOD.

VIOLIN

Violin, a stringed instrument, is one of the most popular and versatile instruments in the world. It is a member of the string family and is played with a bow. The violin is a four-stringed instrument, and its sound is produced by the vibration of the strings. It is a very expressive instrument and is capable of producing a wide range of sounds, from soft and delicate to loud and powerful. The violin is a very important instrument in many different types of music, including classical, jazz, and popular music. It is a very beautiful instrument and is a joy to play.

INTRODUCTION.

PATHOLOGICAL CONSIDERATIONS.

BEFORE entering upon the consideration of the special manifestations of disease, a few general remarks, with reference to the whole subject, appear to be called for.

We have thus far spoken familiarly of disease and diseased action, and our readers, no doubt, conceived that they thoroughly understood us, and we think it very probable that they did, so far as the nature of the subject demanded; that is, they have understood us after the manner of unprofessional society. But, as we approach the Practice of Medicine, it becomes indispensable that we should be definitely understood as to the ideas we attach to certain words, which constitute the initial of medical study. A misapprehension of our meaning of these words will lead to a misunderstanding of all of our subsequent reasoning. A few illustrations will render this matter transparent.

At this time, the prevailing opinion in the profession is, that fever and inflammation are diseases, and upon this opinion is founded a certain medical practice; now, suppose this idea to be founded in error, then it follows that the practice founded upon it must be equally erroneous, and consequently mischievous. At this point we will make two or three citations to prove our statement to be correct.

Watson's Practice, page 94, informs us, that *inflammation* is "a special form of *disease* to which all parts of the body are liable—a *disease* that meets us at every turn."

Professor Paine's Institutes, page 464, says, that "inflammation and fever are the two orders of *disease* which make up the great amount of human maladies and form the general outlets of life."

Professor Gregory says, that "fever is the most important,

because the most universal and the most fatal of all the *morbid* affections of which the human body is susceptible."

These quotations are made from standard and highly esteemed authorities in the allopathic branch of the profession; but, without any expression of opinion on this subject, the allopathic practice authorizes the inference as to what its fundamental doctrine must be. If fever be not *disease*, then there is no warranty for bleeding, purging, and poisons.

People generally believe that if the old school physicians neither bleed or give mercury, they are on a par with the new school—but here they are mistaken; the difference between the two is not confined to a difference between their therapeutical agents, but in the principles that guide to the use of them. Life can be destroyed without the use of the lancet or mercury—and so fever can be brought down without them.

The proper question is this: which is the *physician*, the one who regards fever as a disease, and therefore uses all the means he can command, as bleeding, purging, poisons, and starvation, to reduce and break it down, or the one who regards fever as a proper physiological act of the system to remove disease, and therefore does all he can to sustain and equalize it? It is true that bleeding and purging will equalize it, but in doing this they equalize the patient with the dust from whence he came. But the idea of sustaining fever and inflammation does not belong to their practice.

Because we sustain fever and inflammation as the two most important physiological friends the animal economy can acknowledge, and sustain our principles by a consistent *materia medica*—one without poisons*—we have been denounced as

* As there has been much caviling as to what constitutes a poison, we will present our definition of the word, as we use it. Every substance is a poison, in the abstract, absolutely and necessarily, whose inorganic elements cannot be digested, assimilated, or appropriated, by the function of nutrition, to any normal purposes in the animal economy.

Strychnine and hydrocyanic acid are not, in the abstract, poisons, but relatively they are, in common with all other substances which are not, in the abstract, poisons.

Under this definition, *mercury*, *arsenic*, *antimony*, *bismuth*, etc., are, and in defiance of all caviling or sophistry must be, poisons; and, so long as the smallest conceivable particle of any such absolute poison is in the system, the vital force will labor to cast it out, because it is, *per se*, a foreign body—a source

innovators, charlatans, and quacks. We will reverse this charge and clench it, before we have done.

Most of the modern allopathic writers on inflammation and fever refer us, for the purpose of obtaining a more thorough understanding of these subjects, to Professor John Hunter's work on inflammation. Well, what does Professor Hunter say?

In vol. iii, page 285, he tells us that "inflammation, in itself, is not to be considered a disease, but as a salutary operation consequent either to some violence or some *disease*." It "is an action produced for the restoration of the most simple injury in sound parts, which goes beyond the power of union by the first intention."

He continues, on page 293, "Pure inflammation is rather an effort of nature than a disease."

On page 286, he again remarks, "From whatever cause it (inflammation) arises, it is an effort intended to bring about a reinstatement of the parts to nearly their natural functions."

Upon this doctrine we stand—a doctrine that is recommended by the most distinguished allopaths of the day; and yet, strange to tell, it is especially and peculiarly the one which they have all abandoned. Who are now the innovators, the charlatans, and the quacks? The allopaths recommend this doctrine, and yet, practically, denounce it—we believe it and practically conform to it—which, then, is the most consistent?

Now, suppose we try the Hunterian doctrine of inflammation by a few illustrations.

A mechanic has a splinter forced under his finger nail, and so broken that he cannot extract it. Is not the first observable result in the part inflammation, and then follows suppuration, granulation, and cicatrization? Is not the whole of this process normal, under the circumstances? Could the part originally have been in a normal condition if these phenomena had not succeeded to the accident? Was not the inflammation

of irritation and cannot possibly be converted into anything that is not unfriendly to the animal tissues.

In the Western Journal of Medicine, vol. 2, page 636, Professor Drake says that "mercury has been found in the bones, blood, brain, and nerves," and yet it cannot form a part of either of them, nor can any other substance that is embraced by our definition—they are all emphatically poisons.

absolutely essential to the expulsion of the splinter? Now, suppose the patient to have been bled to such an extent as to have prevented the inflammation, would the splinter have been expelled?

As a further exemplification of this subject, we extract the following illustration from "Simon's General Pathology :—"

"A man has a sudden and severe pain in some part of the surface of his body, accompanied by a rush of blood to the painful spot, and by a disposition to the pouring out of serum there. This, obviously, is not a condition of health. But, if you knew that a quantity of boiling water had just been dashed on the part, you would be disposed to transfer the term *unhealthy* from the effect to the cause—from the man to the kettle. In fact, the man would have been unhealthy if this redness and vesication had not occurred." Then, as they did occur, they were right actions, under the circumstances, and cannot, therefore, under any definition of disease, be called diseased actions.

Doctrines as sound as this have been proclaimed by several of our living allopathic professors, but they appear only as luminous rays that occasionally flitted across their minds—they were not maintained with consistency, nor followed by practice. In proof of this, we will select a few illustrations: Professor Paine, in his *Institutes*, page 465, teaches that "inflammation takes its rise in purely physiological conditions and holds its progress and decline under the same great natural laws of the constitution." The professor could not have expressed himself in language more compatible with truth, but he certainly did not understand the import of it, or he would never have written the following: on page 464, he says, "Inflammation and fever are the two orders of disease which make up the great amount of human maladies and form the grand outlets of life."

In inconsistency Professor Watson has more than equaled the preceding. He says, *Practice*, page 94, that "It is by inflammation that wounds are closed and fractures repaired—that parts adhere together when their adhesion is essential to the preservation of the individual, and that foreign and hurtful matters are conveyed safely out of the body." This doctrine is correct, but that he should administer calomel to break

down inflammation, and, when down, to expect it to carry such a "hurtful matter" out of the system, is much more than we can conceive to be possible with a rational man. But we will hear him again: on the same page, he teaches that "inflammation is a special form of disease, to which all parts of the body are liable—a *disease* that meets us at every turn." Upon which of these principles did he found his practice? upon the latter, and in aiming his blows at fever and inflammation he destroyed many of his patients, no doubt.

It is not our purpose to discuss, at length, this question—we only wish to make our pathological position known, that the fundamental principle of our practice may be understood. We will not, therefore, pursue it further than to present two cases to illustrate the two systems of practice which are founded, respectively, upon its two horns.

In 1837, the writer had the inferior extremity of the right fibula fractured—his general health at the time was, perhaps, never better—it was treated by a Philadelphia graduate, who subsequently devoted a year or two to the surgical wards of the Parisian hospitals. In the course of the treatment he was duly bled, purged, nauseated, calomelized, and starved, and what is equally worthy of note, he approved of it. In four months he left his room by the aid of a crutch, but very much reduced in flesh. In 1841, he had both bones of the left leg fractured; but, let it be remembered, in the meantime he had changed his opinion of inflammation, and of course his views of practice. In the treatment of this fracture, he was neither bled, purged, nauseated, nor starved; but upon the supervention of fever, he took, in two days, twenty grains of quinine; this was all the treatment he had, except plenty of palatable and nutritious food. In thirty days, by the aid of a crutch, he left his room, weighing some ten or twelve pounds more than when the accident happened.

These two cases, in our judgment, perfectly illustrate the two systems of practice. In the first case, the efforts that were made to break down, and to keep down, the inflammation and fever, kept the patient down. In the second instance these manifestations were received as friends, who had come, expressly, for the purpose of mending a broken limb, and, therefore, instead of trying to bleed, purge, and starve them

out of existence, they were fed on quinine. In the treatment of this second case, it will be perceived, furthermore, that he had a thorough faith in this doctrine, notwithstanding the force of education to the contrary. It may be interesting to add, that he had with him a fellow graduate who manifested much concern for his condition—he frequently implored him to abandon his course—that he was risking not only his leg, but his life; but he gave no ear to him, because he saw that he could not see well—that he was still wearing the old foggy-looking spectacles that were given to him by the university.

Although we have perhaps sufficiently illustrated our position, we have not specifically defined our understanding of the words, disease, fever, inflammation, physiology, and pathology.

DISEASE we understand to be that condition of a part which disqualifies it for the performance of its function.

FEVER is a manifestation of an effort of the system to remove disease—a physiological action under the circumstances—a general or constitutional indication of disease.

INFLAMMATION is an evidence of local disease—an action produced for the restoration of a diseased part—an effort of the vital force to remove disease.

PHYSIOLOGY is the science of life in all its modes of being, but is now usually restricted to life in a state of health.

PATHOLOGY is the science of life in a state of disease—it is physiology under abnormal circumstances.

We may be asked, what is gained by these views, definitions, and explanations? We answer, everything that can be gained by having the truth, instead of a fiction or a falsehood. There is a wide difference between considering ourselves as called upon to treat fever as a disease, instead of a physiological action, or an effort of the system to remove disease—as much difference as there is between bleeding and purging on the one hand and the administration of antispasmodics and tonics on the other. There is, we conceive, a wide difference between supporting the vital force under the inflammation of a broken leg, by nutritious diet and tonics, and such bleeding, purging, and starving as will break down the inflammation and defeat a restoration of the part. There is a wide difference between setting up, by the use of means, a new pathological action, that is always hazardous and frequently

fatal, and that of aiding and regulating a pre-existing one. Finally, we think that there exists a wide and an irreconcilable difference between assisting nature—the *vis medicatrix naturæ*, to effect a desired physiological change, and that of crippling all of her efforts and energies.

If our definitions be correct, and they are supported by such authority, as the most distinguished allopaths recommend to our study, then the difference between the eclectic and allopathic practice is as great as that between noonday and midnight.

It will be conceded by all, that without vital force there is no manifest life—death only exists. And it will readily be admitted, that without blood there is no life, and that death can be easily produced by bleeding, and that to the extent of any abstraction of this fluid is the vital force reduced. It is equally well known, that purgatives and poisons will diminish and even destroy the vital force; and, finally, we think, that it would be difficult to prove that an animal can have too much vital force.

Now, is it not absolutely true that a very large majority of physicians do pretend to cure disease by bleeding, purging, and the administration of poisons? Do they not sometimes, yea, frequently, bleed and purge to reduce, or else to equalize vital action, and then, in a short time, give stimulants and tonics to sustain the vital force? Do they not bleed in cholera and then presently inject salted water into the veins to supply the place of the blood they had just abstracted? But we will be more special.

Dr. Armstrong, speaking of scarlatina maligna, says, “the vehemence of the attack and the intensity of the excitement rapidly exhaust the vital energies.” And what does he recommend to support them, and to prevent their destruction? “Emetics followed by brisk purgation.” Is not this equivalent to bleeding a man to keep him from fainting? A disease must be very violent when it can exhaust vital energy with more rapidity than “brisk purgation.” A patient must certainly have a vigorous vital force to sustain himself under both. Professing to be the friend of the “vital energies,” he gives aid to the disease; but this is not the only glaring inconsistency of his practice. When he visited the patient, he found

the "vital energies" struggling to force the poison upon the surface, or, in other words, to remove the cutaneous obstructions, and he immediately countermands the effort and orders "brisk purgation," to force the "vital energies" to retreat to the bowels and to leave the disease in possession of its stronghold. Great must be the "vital energies," when they can successfully resist a malignant disease, reinforced, as it usually is, by bleeding, purging, and poisons.

Next to the lancet, mercury is most prized in the treatment of inflammatory affections, and perhaps on account of that quality which Professor Harrison assigns to it, "a most powerful depressor of the energies of life." According to our definition, it is a poison, and Hooper's Dictionary teaches, that "all our most valuable medicines are active poisons."

Now, inasmuch as all epidemics are produced by a poison of some kind, and as the "vital energies are frequently incapable of expelling it," would common sense suggest the propriety of introducing into the system another poison, on the plea that two poisons are more easily expelled than one, more especially as one of them is unalterably a poison, and "a depressor of the energies of life?"

This specimen of practice, by Dr. Armstrong, is a pretty fair illustration of allopathic practice in general—it was once our own—and as one illustration is enough to expose its hideous deformity, we will drop it, and proceed to the consideration of more agreeable subjects.

Having disposed of such physiological and pathological matter as became suggested to us, with reference to our leading object, it yet remains for us to indicate and illustrate that fundamental law or principle that will guide our practice. We say fundamental law or principle, because, maintaining as we do, that disease is but one—a unit, there can be but one fundamental change, which is to, or from, health; and, as the leading object of this work is to teach how we may, with the most facility and certainty, effect the first—a change to health, it becomes the paramount duty of students to discover, as far as possible, the processes which living organized systems establish for their own preservation, under the various contingencies incidental to existence. So far as they shall accomplish this, they will find that they have nothing to do but to

aid, and every dose of medicine they shall administer, during their ignorance of the intentions, or the character of the efforts the system is making, will be done empirically.

It will not, we presume, be disputed, that the vital force is a unit, if not in fact, at least in its action, as much so as steam—neither of them can accomplish anything, without appropriate apparatuses to act upon; and we are so constituted as to believe that all living organizations have been so arranged and endowed as to act, under existing circumstances, not intelligently, but in harmony or in accordance with the laws of intelligence—that the various organs that constitute the system cannot and will not act, except as they are compelled by the vital force, and that when they do act, it is with the wisdom of that intelligence which designed them, and assigned to each its peculiar mode and range of action. A denial of this conclusion is a virtual denial that science does or can exist; it is equivalent to admitting that a living organism, in a state of disease, may become as perfectly a mass of confusion—a chaos—as a mere mechanical aggregate.

We do not know that any one ever doubted that living organizations act in harmony with the laws of a predetermined wisdom; but it will be seen, before we have done, that physicians have practiced, and now do, with either a shameless ignorance of, or a careless indifference to, the laws or economy of the living system. The man who has not an intelligent, a fixed, and an abiding faith that every action that takes place in a living system, is, under the circumstances, wisely directed—because directed by the provisions of that wisdom which is SCIENCE—which admits of no errors—no accidents in the measureless bounds of the universe, is unfit for the profession.

The physician who is thus constituted, and thus qualified, never bleeds and purges to support the “vital energies,” but removes impediments—the causes of abnormal actions—and aids the vital force to maintain such movements as shall be in harmony with the living *norma*.

In a state of health, the vital force is adequate to the maintenance of an equilibrium of action in all parts of the system, but under the influence of a local injury, this is not the case—it is indispensable that a major action shall be sustained in the injured part. In the case of a fractured bone, constipation

immediately supervenes, or else a diarrhea, which is invariably an unfavorable symptom—and these remarks are equally true of small-pox. All agree that constipation in this malady amounts almost to a pathognomonic symptom; and when diarrhea happens to appear in its stead, it is regarded by all writers as unfavorable.

Now, the fact that constipation attends all inflammations of the animal system, cannot be regarded as an accidental circumstance—it should teach us something in reference to the agency of the vital force, under the existence of such forms of disease as we have alluded to. During the inflammatory stage of small-pox, purgatives are positively prohibited; now, we would be pleased to know why they are not prohibited in fractured bones and gun-shot wounds? If no valuable reason can be given for this difference of practice, then it is empirical.

Let it be remembered, then, that in fractures and other wounds, something more is required of the vital force than barely to maintain repairs; and to afford an additional force to the injured part, an inequilibrium of force must be effected in the system; and, as it cannot be taken from the animal, under the circumstances, it is taken from the vegetative, and constipation results, and continues until the work of recovery has fairly become established.

If, in such a case, a cathartic be administered before the thorough establishment of inflammation, the recovery of the part is retarded—and how often has it been retarded by a rigid antiphlogistic treatment?

In the case of the small-pox, the unmistakable purpose of the system is to become relieved through the cutaneous surface—to it the vital energies are directed, and the obvious effect of a purgative is to counteract the vital force, and to expend as much of it upon the mucous membrane of the alimentary canal, as might be sufficient to force the disease or its cause upon the surface.

Observation, during many years, has satisfied us that cathartics are used too much by every branch of the profession. Our object is a sanative course of treatment in all the manifestations of disease, and we are sure that an injudicious use of cathartics is as far removed from such a practice, as the use of the lancet is. In fevers and inflammations,

cathartics become indicated when the fecal contents of the alimentary tube become a source of irritation. Health cannot be restored, in any form of disease, until secretion becomes re-established, and when it is, we have always observed the alvine excretion to return with promptitude, and to continue with more health, than ever follows the use of cathartics.

In diseased conditions of the tissues and organs of animal life, they are not properly indicated, not even when the brain and lungs are invaded, because more legitimate means of equalizing the circulation can be employed. Except for the purpose of dislodging sources or causes of irritation, and this irritation must become manifest, we have no more use for cathartics—purgatives, than we have for the lancet. When the intestinal contents are producing no irritation, is it not better to let them alone, than to introduce into the bowels a certain cause of irritation?

In the most confluent forms of small-pox there is no danger so long as an equilibrium exists in the irritation and circulation of the system, and if this equilibrium cannot be maintained without purgatives, then there is but little probability that it will be with them, because they cannot be administered without producing more or less of inequilibrium. In most cases of constipation, to the extent of mischievous irritation, the want of action is most generally confined to the large intestines, and more particularly the rectum; consequently, it can be relieved by enemas, and nothing further is needed. When disease invades the system of vegetative life, cathartics become indispensable, but not to the extent, even then, of Dr. Armstrong's idea of sustaining the "vital energies, by "brisk purgation."

In dangerous forms of disease, our allopathic friends resort to what they call "heroic remedies," which consist of bleeding, purging, blistering, and mercurialization. Now, it will be admitted, that it is impossible to draw blood without reducing the vital force; purging will do the same, and as to mercury, Professor Harrison says, that it is "a most powerful depresser of the energies of life."

Cholera wastes life as rapidly as bleeding and purging, and it is as great a "depresser of the vital energies of life," as mercury. In view of these facts, it is exceedingly singular

that an attempt to cure it by bleeding and the administration of a pound of mercury, more or less,* should ever have been seriously entertained by a well-informed physician.

We have also our "heroic remedies," but they only reduce spasm or constriction, equalize the circulation, promote secretion, and thus remove disease by depuration; and they do all this without imposing a tax upon the "energies of life," and without the establishment of another form of disease, as a mere sequel, that may prove as fatal as the one it supplanted.

Although, in the case of inflammatory fevers, the arterial action is very greatly augmented, yet we are not to conclude that there has been an increase of vital power, or of the energies of life, because disease is not creative—it can neither produce nor augment life—it can only occasion a suspension of its manifestation in some functions, and an accumulation of it in others. When that quantity of vital power, which, in health, maintained the functions of secretion, excretion, and nutrition, is again returned to these functions, fever ceases to exist. The increase of vital manifestation, in fevers, is not universal, nor even general, for while there is an exaltation of vitality, in some parts, there is a deficiency in others, as is most clearly evinced by a loss of appetite, the wasting of the body from an absence of nutrition, by the weakness of the muscles, in many instances, and by a sense of prostration. When we can equalize this vitality, we restore health; but if we abstract vitality, by bleeding and purging, we just so far incapacitate the system to repair the lesion that disease has inflicted; for this end, then, it is absolutely essential that we should carefully husband the vitality and its resources.

We have shown that neither fever nor inflammation is disease, but are accumulations of vital force for the removal of it—that disease is an incapacity, in a part, or parts, to perform their functions; and we now add, that this incapacity depends upon chemical, mechanical or vital impediments or obstructions, and when it is of the third character, it is a result of defective or suspended depuration.

Now, suppose the skin to have failed to perform its function,

* We cannot prove that more than eleven ounces were administered to the same patient in a case of cholera.

and that the failure has resulted from suspended secretion, and therefore replete with obstructions from arrested or suspended depuration; how is it possible for bleeding or purging to remove the obstruction? By reducing the vitality, they reduce the energy of the effort that is made for its removal, but the obstruction still exists, and the power to remove it is diminished. Is it not obvious that every effort that is made to remove the disease, by such means, only tends to confirm it?

Suppose the lungs to fail in depurating the venous blood, and tubercle shall result, will bleeding and purging remove it? Suppose, again, the kidneys to fail to eliminate, to a sufficient extent, the urea, and rheumatism shall result, will bleeding and purging remove this urea, and thereby remove the rheumatism? Has not experience proved that they cannot?

If, then, disease consists in obstructions, and that they result from suspended depuration, is not the indication of cure a re-establishment of the depuration? Do not the hot-springs of Arkansas, cure rheumatism by establishing secretion and depuration?

It will now be understood that our "heroic remedies" consist of those articles, and of that mode of practice, which are the best calculated to equalize the circulation, promote secretion, and consequent depuration. Is it not equally perceptible that we may do all this without the least intention of reducing the absolute quantity of the vital force? Nay, more, that the less we waste of it, the greater is our success? Is it not, furthermore, obvious that we may, by producing hyper-secretion, injudiciously weaken or exhaust the patient? And is it not equally clear that our antiphlogistic treatment consists in removing the disease, and not the vital powers of the patient, or both of them indiscriminately?

The preceding views have been advanced with reference to those forms of disease in which the allopathic branch of the profession would bleed and purge; but there is another form, in which they would not resort to the same practice, and yet, it would be equally rational; it is that, in which there is less equality between the amount of the obstruction and the power of the vital force—a case of congestion in which there is not existing sufficient power to effect a reaction. In these two forms of disease there is no similitude in the treatment by the

allopathic physicians, and yet the two forms are essentially the same—differing only in degree—the vital power in the one, or the obstruction in the other, predominates. In the former, there is more demand for antispasmodics, and the latter, for revulsives. When the circulation shall become equalized, secretion will follow—depuration will take place—the blood and tissues will become purified—the obstructions, and, of course, the disease, will be removed.

While, as eclectics, we reserve to ourselves the right to use any and every article, now known, or that may become known, when we shall become convinced that it is the best we can do for the patient—that we entertain no prejudice against any one—that so long as a *proper* use can be made of any one, we advocate it. But, as observation has taught us that the indigestible medicines act unkindly upon the system, and frequently do irreparable mischief; and, as the same great teacher has most thoroughly convinced us that we have a digestible materia medica that is adequate to achieve all that is desirable, in a higher degree, too, than the indigestible, we hold it to be humane, wise and philanthropic to discard from our practice all indigestible medicines—that is, all poisonous elements—indeed, we hold this course to be, on the score of justice, absolutely imperious.

But, after all, more depends upon correct principles, in practice, than upon the agents used. Nothing but mischief can follow the application of a false principle. Those who contend that fever is a disease, would do about as much present mischief with purely digestible medicines, as they now do, the difference being only in the sequelæ. Those who practice, consistently, upon false principles, do more mischief than those who have no principles, because the latter may sometimes be right, while the former never are; it becomes, then, a matter of the first importance, that we should be certain that our principles constitute the expressions of truth; when this is the case, so long as we are consistent, we can never be wrong, though we may be ignorant.

There exists throughout the length and breadth of the medical profession, an opinion—for such it merely is—which we think to be an error, and, as such, is attended with much mischief—we allude to the opinion that some forms of disease

are hereditary. If the truth of this opinion was ever questioned, or doubted, we have not learned it; and yet, if there be in the profession an error more clearly exposable than it, it has escaped our notice.

In the first and second Books of this treatise, we have used the word *hereditary* in its common acceptation, because, as yet, we had afforded us no proper opportunity to expose the error of it; but now, as we are about to commence the consideration of the special forms of disease, it becomes proper that we should make known our opinions upon all leading subjects—and this one is of that character.

As the hereditary character of phthisis pulmonalis is not doubted, we shall make a principal use of it in the illustration of our views.

In the appendix, we have, by measurement, and we may add, the observation of twenty years, shown, that consumption is associated with a certain relative development of the medulla oblongata and the cerebellum. When we consider the functional relation which these parts bear to the lungs, we must conclude, that if the coincidence we have pointed out between the disease of the former and a certain development of the latter be uniform, that they hold the relation, primarily, to each other of cause and effect.

We have found that those who are liable to phthisis have generally a large medulla oblongata and a small cerebellum, relatively, and the exceptions to this law come under the reverse of these organic conditions, through the instrumentality of very different exciting causes. Because of these peculiar organic conditions, as to development, it does not follow that there existed either active, passive, or latent elements of disease, nor even the most remote possibility of a predisposition to it.

Peculiarities of both size and form are transmissible from parents to their children, and each form, under causes of excitement, must and will represent its identity in its mode of action, which, of course will be modified by influencing circumstances. In other words, no two different forms can manifest the same mode of action under the same cause of excitement and the same attending circumstances. Every one form

of disease, therefore, is as vulnerable to the charge of being hereditary as phthisis.

In one peculiar form of organization, there exists a liability to rheumatism, to gout, to cancer, and perhaps to some other forms of disease; in another, there will be found a liability to passive congestion of the brain, phthisis pulmonalis, and other kindred forms of disease, depending upon different degrees of development, different, or even the same, causes of excitement and attending influences.

A large proportion of society are so nearly balanced as to have no preponderating liability to any particular form of disease, and yet may be liable, under the force of exciting causes, to any one.

The truth of the doctrine we have here taught, can be, we think, amply sustained by a reference to well known facts.

Take a case of what is called a "hereditary predisposition to phthisis,"—tell the patient that this is his condition, and what becomes his conclusion? Nothing less, inevitably, than premature death—he considers himself fated—doomed irrevocably to such an end. With such a conclusion preying upon his mind, how is it possible that he should recover from any form of disease that has become constitutional?

Perhaps his physician may send him to the island of Cuba, in order that he may possibly recover under the peculiarities of such a climate. But what is the principle that actuates him in sending him to the south? If any one has discovered the principle, we have not seen it. He is sent there, so far as we have learned, empirically; he is sent there under the hope that he may be as fortunate as some who had preceded him. But if his disease be *hereditary*, how should any one expect him to recover by a change of climate, of diet, or of anything else?

In Boston, a given measure of atmospheric air contains more oxygen than the same measure does in Cuba, and yet the Boston patient breathes as though he was struggling for more oxygen, and he really is. If then, he obtains, in Cuba, less of what he wants than in Boston, why send him there?

A simple illustration will explain why he should go south: A horse is breaking down under the weight of his load,

although he receives regularly a full measure of food. Now, can he not stand the travel better with one-eighth less food, if one-half of the load be taken off him? Every reader, we think, will answer in the affirmative.

The lungs perform two functions—by inspiration they receive oxygen, which is indispensable to the production of animal heat (to say nothing of other purposes); but in Cuba he requires less animal heat, and therefore for this purpose he requires less oxygen. The other pulmonic function is that of expiration—an elimination of carbon from the system. Now, while in Boston, the lungs had no aid in the performance of this function—they had to perform the whole duty—that is, they had to carry the whole load; but in Cuba, the high calorific temperature so excites the skin and liver that they take from the lungs half their load. In view of this explanation, we can understand how it is that a young man, before any disease occurs in his lungs, by going to the south, although organized for consumption in the north, will far more probably die of some bilious form of disease than with any pulmonic one.

It seems, then, that the patient had not inherited a predisposition to phthisis pulmonalis, but that he had inherited a peculiar organization, which was not compatible with a continuance of life under certain circumstances. It is possible, however, that, by such training as would develop his cerebellum, he could so have changed his organization as to have adapted it to its native situation.

It is possible that his organic condition may have been just the reverse of what has been previously supposed—his medulla oblongata may have been feeble, and the cerebellum large, and consequently, he may have been obese; but the nutritive process, in this relation, may have become arrested, and hence the lungs have to eliminate as much more carbon than usual, as the system had been in the habit of converting into adeps, which, proving more than they can do, they finally generate tubercles in themselves, or cause them to be deposited in other parts. We do not believe that consumption is often produced under these circumstances, but it does happen—that is, men have become obese, and subsequently have died of phthisis pulmonalis. But in this case, as in the other, proper

training in youth—such as will produce an equilibrium between the medulla oblongata and the cerebellum—will prevent the disease.

No age, it seems, is exempt from this fatal form of disease, and the reason why it is so must now be obvious. Some children are born so feeble, in one or the other of the above-named organs, as to render it impossible for them to live to maturity—some have such an endowment of them, in connection with circumstances, as will sustain them even to old age; but as the cerebellum begins to decline at the meridian of life, it finally becomes too feeble to sustain the lungs against disease; hence the cause of consumption at a very advanced age.

It is well known, that many men have lived to old age whose parents had died of consumption, and we have no doubt that they would have died of the same disease if they had lived under the same influences. It becomes, then, our duty to investigate the influences by which such persons were saved, so that we may do for some, by design, what accident has done for others.

We do not doubt the accuracy of our premises—we believe them to be easily and satisfactorily demonstrated, and if so, there can be no doubt as to the proper prophylaxis—exercise of the muscular system, particularly of the superior extremities and chest. This will force a development of the muscles—increase and strengthen the circulatory and the respiratory systems, and, as a matter of course, those portions of the encephalon which preside over them.

By this course, those organic forms which have been transmitted from parent to child for numberless generations, are broken up—an improved modification has been effected, and the further transmission of a phthisical liability is arrested.

We shall now make a few extracts from “Simon’s General Pathology,” for the purpose of showing how little is known upon this subject, and how impossible it is to reach a sound conclusion by reasoning from a false position. He is treating of the hereditary character of the tubercular diathesis, and especially about the tuberculous nature of a rabbit’s liver that was sent to him.

1. “On inquiry of a *candid* poulterer, I found that these

'tubercular' livers are common — very common; that they will be found often in almost every tame rabbit cut open, and in litter after litter; and, strangely enough, that they do not appear incompatible with good health, or at least with sufficiently good for market purposes."

2. "In continuation, I made various experiments to see if I could produce tubercle artificially, and various other examinations to see if I could find it in rabbits dying under other circumstances. The result may be told in a word: I have never seen tubercle in a rabbit."

3. "One sort of experiment does apparently tend to develop tubercle. As we often stay the process of phthisis in the human subject by transferring our patient to a tropical climate, so, conversely, we can facilitate the development of the disease by importing the subject of our experiment from warmer to colder latitudes. It is said, that among the beasts of the Zoological Society's Gardens, tubercle is a frequent cause of death; and especially those which come to our climate from one of a higher temperature. From my own knowledge, I will only venture to confirm this statement in regard of monkeys; as they have the dignity of standing next to man in form, so they have the inconvenience of this very human liability: when transferred from the hotter climates to England, and when surrounded by the artificial circumstances of a menagerie, they are apt to die with tubercles in their lungs, mesentery, and spleen."

5. "Here, however, let me detain you on the subject of *hereditary transmission* of scrofula, and explain to you what I mean, when I speak of its being continued in this manner from generation to generation; I do not mean that, in the process of impregnation, actual tubercular matter passes from the system of the scrofulous father into the germ of the infant, to remain latent there, till circumstances call for its development; nor that, during uterine life, the blood of the child is poisoned by its mother's blood, as occurs in small-pox or syphilis. What I mean is this: that the scrofulous diathesis—that the *disposition to form tubercles* is transmitted; that the child inherits an imperfect pattern of development."

6. "I must explain this more fully, for the inheritance of *dispositions to disease* does not belong to scrofula only; it

forms a very important problem in the pathogeny of cancer, with its allied disorders (for they are hereditary), of gout, and rheumatism, for they too are heirlooms in families; and it, consequently, constitutes one of the most important questions in the study of General Pathology."

7. "Every one recognizes in the process of generation a certain amount of that influence by which a parent becomes the pattern of formation for his child. No man expects to become the father of an armadillo, or a flying-fish, or a stag-beetle. But more than this, it is expected, and, on the whole, very generally realized, that the child shall be more like its father than its god-father. So far the case is clear; but I wish you to observe the tendency further. Follow the child in its ulterior development, for that is the point, and mark how exactly, in various exterior and noticeable signs, he repeats the development of his father; how, in arriving at the age when his father got corpulent, he acquires the same figure; how, at the age when his father became gray, or bald, he, too, becomes gray, or bald, and with the same succession of parts—vertex first, or temples first, or forehead first, as the case may be; how his teeth decay, or drop, or protrude, just as his father's; how his pulse is of the same character—even, as we have often noticed, to the degree of copying an intermittent rhythm; and how his habits of sleeping and waking follow the same direction."

8. "Now, observe, for the distinction is one of great importance, that these things are not *connate*; the child is not born a copy of the father as he begat him; but he is born, having his father's past development as a type for his own future development, so that he shall be developed as his father was developed, and shall hereafter become like him. In addition to that general law of human development, by virtue of which he is destined to be a mammal rather than a bird; and a man rather than an ox; and to reach puberty, manhood, old age, and death in a certain defined succession; he is further possessed by an inherited *personal and particular law* of development, which affixes a something peculiar and individual to his passage through each period of his existence."

9. "If my meaning in all this has been intelligible to you, you will readily conceive that diseases affecting the development

of the body are peculiarly those which transmit themselves in the line of hereditary succession; that the disposition to a disease would be hereditary, where the disease consisted of a faulty type of development, affecting limb, or viscus, solid or fluid, in the body; and that no disease would be hereditary, except in so far as it might be developmental."

10. "Accidental mutilations do not become hereditary; for many centuries the Jews and the Mahommedans have undergone circumcision of the prepuce; but the local deformity has never transmitted itself; the new-born Jew or Mussulman offers probably as much foreskin to the knife, as the immediate successors of Abraham or Mahommed."

11. "And, if you transfer these arguments to the several varieties of disease, you will know, on the one hand, in what diseases to anticipate hereditary transmission; and on the other hand, what peculiar character of disease, to-wit, its developmental character, may be inferred from the fact of its hereditary succession. Of a disease like scorbutus or ague, dependent on the presence or absence of certain exterior accidental conditions, you would anticipate that it could not be hereditary, any more than a wound or a dislocation. Of those accidental accompaniments of scrofula—the morbid processes which arise in defective nutrition, the ulcerations of the cornea or intestines, for instance, which depend on insufficient or inappropriate nourishment, and which, as I have said, are essentially co-extensive in their duration with the exterior causes which produce them—you would know that they have no natural tendency to perpetuate themselves in this way. Of another disease, on the contrary—one like plethora, relating essentially to the rate or degree of development in an element of the body, you might predict that it would tend to become hereditary. And whereas it is in the blood, more strikingly and more constantly than in any ingredient of the organism, that development is ever in progress; whereas, it is eminently in the blood, that we have at each moment an epitome of the whole development of the body, and find the earliest rudiments and the latest relics of every organized tissue, nascent or in decay; so surely it would be in this fluid—the scene or the subject of so many developmental metamorphoses, that one would expect to find the material explanation of many

hereditary diseases. One would expect that an inherited disposition to form, at various periods of life, and in a number of different organs, certain special and characteristic materials, bearing definite relation to the normal products of the body, would indicate a peculiarity in the development of the blood, whereof those deposited materials would be the result and the expression."

12. "Such is the state of the case in regard to scrofula; and therefore it is, that I have analyzed this question of hereditary tendencies to disease. Strict experiment would not, I think, justify me in telling you, *as a certainty*, that the scrofulous diathesis has its explanation in such grounds as we have gone over."

13. "But, though we are short of absolute demonstration on the subject, (14) I may tell you this with confidence: there exist many facts rendering it highly probable that tubercle has its rise in disease of the blood; that this disease of the blood is one affecting its development; and that it is as a developmental disease of the blood that scrofula acquires its tendency to hereditary succession—its tendency to perpetuation as part of a family likeness. I shall presently give you other evidence in support of the same view."

15. "Meanwhile, to return for a moment to the narrower ground from which we started, remember, that what is meant in calling scrofula a hereditary disease is—not that the tubercular material is to pass from parent to child—not that the child is to be born with tubercle already in its body—but that the disposition *to form blood in a manner which shall give tubercle as a collateral phenomenon*, exists as a clause in the child's charter of life, and forms a part of its type of development, as truly as any exterior resemblance which he may bear to the configurative growth of his parents."

16. "I may illustrate to you the importance of these considerations, in quoting the result of some statistics collected at the Consumption Hospital, by the officers of that institution, and published by them in their last year's Report. They find that, among their female phthisical patients, thirty-six per centum report their parents to have been consumptive. If you consider this statement simply, you will be struck with its importance, and with the magnitude of its consequences; and,

in order to do full justice to it, you must further remember, that, in the remaining sixty-four per centum, there may have been another considerable proportion whose parents had not indeed suffered from tubercular phthisis, but may have suffered from tubercular deposit predominantly in other organs than the lung—in the lymphatic system, perhaps, or elsewhere; and that there may have been a second considerable proportion, in whose family the parents may, perhaps, have escaped tubercular disease in their own persons, but may yet have transmitted the predisposition from their own immediate predecessors to those latter inheritors of the disease: for it is notorious, in many matters of family likeness, that some very characteristic feature, healthy or morbid, may develop itself only in alternate generations, or may at least remain latent during a single generation, unless many circumstances conspire powerfully to favor its evolution.”

We have made the preceding long extract, to give our readers the best and most labored argument we have ever seen in support of the hereditary pretensions which has been claimed, from time immemorial, for certain forms of disease, and will now proceed to notice it in detail in the order of the numbers we have attached to it:

1. The poultry and rabbits, of which he speaks, had been fed to great repletion without exercise, and as, in such cases, there is but little waste and little necessity for repair, the food they took being more than enough for these purposes, the surplus was stored away in the form of adeps, but in this process too much duty had been imposed upon both the lungs and liver, and as a consequence tuberculation would fall upon one or the other, or upon some other part. A similar result is common to our hogs and cattle which are treated in the same manner. The general health of the animal is good, and whatever of disease that may be discovered to exist, is local, and confined to some glandular structure—but this is not always the case—in a few instances the muscles are full of tubercles.

2. Why should he expect to find tubercle in rabbits under other circumstances? It may be reasonably supposed, that rabbits, in a state of liberty, would live in accordance with their organic laws.

3. We think it much more than probable, that monkeys

imported into England, and set at liberty, would, for several generations, if not perpetually, escape from tubercle; but that they, or any other animal, should acquire tuberculous forms of disease, after years of confinement in a close cage, with even tolerable feeding, is what we should certainly expect. It is certainly very improbable that they acquired the disease by *hereditary* entail, and if they can, under certain circumstances, spontaneously, acquire the disease, then it may, in a similar manner, obtain in human society.

We have shown in the beginning of this paper, and incidentally in several other places, how tubercle originates under certain circumstances, with certain organic conditions. A modification of the same principles accounts for it in these monkeys and other animals similarly circumstanced—as the poultry and tame rabbits. (See answer 1.)

In all cases of phthisis pulmonalis, in our northern latitudes, the lungs are incapable of depurating the venous blood—tubercle or obesity is the result; and should the latter result become arrested or distributed, tubercle will or may still result. In the case of the monkeys and other confined animals, a surplus of carbon is accumulated in consequence of insufficient exercise—their lungs, though adequate to all the ends of normal existence, become, under the confinement, as in the case of feeble development, incapable of adequate venous depuration, and the consequence must be the same.

4. If he had possessed the most remote idea of the cause of tubercle, he would never have written this paragraph. The poultry and rabbits were not rendered tuberculous by “deficiencies in air, in exercise, (and) in diet.”

5. We perfectly agree with him in this statement, with one qualification, he should have added, under circumstances; and we also admit his final conclusion, but we claim the same in every instance where there is any kind of imperfection or weakness of constitution. But, in the beginning of this paragraph, he promised to explain what he meant by “*hereditary transmission*,” and concludes by a simple admission or statement of the fact, which is not an explanation. “The child inherits an imperfect pattern of development.” When was there one born that did not?

6. We hope he will, for as yet he has certainly failed. We

admit that all these forms of disease do appear in families in succession, and we admit that a *liability* to them, under circumstances, is inherited—just as a liability to bilious fever or any other form of disease is inherited by those who have had it, under the circumstances of their exposure to the proper exciting causes.

7. And, he might have added, he has, like his father, a thick lip, a pug nose, or red hair. We admit the whole of this paragraph—every word of it. Under the peculiarities of the child's organization, all is normal—in nowise blended with disease, and, so far as we know, entirely beyond the reach of any modification—no change of place will change the color of his hair or the thickness of his lips; hence we can see no similitude between these organic conditions and a hereditary transmission of a tubercular disposition.

8. We admit the whole of this paragraph, except so far as it involves the kind of disease of which he may die. The father may have died of phthisis pulmonalis, but the son may have avoided the necessary exciting circumstances, or his pursuits in life may have proved a complete protection against it, or he may have gone to the south when young, where he could not have phthisis, but would, under the circumstances of organization, most probably have some form of disease peculiar to the digestive system. By the laws of procreation, the child could not be anything else than human, and by the same laws he was forced to follow the type of his parents, no matter what his pursuits may be, or into what country he may travel. He may enfeeble or strengthen his system, but the elements of it will still be the same. Neither disease, nor a predisposition to it, was incorporated into the organic laws; on the contrary, a strict obedience to these laws constitute a certain prophylaxis. Hence it is seen, that the moment we leave those organic forms which are essential to humanity, the necessary similitude between parent and child ceases.

9. We do not admit that there are any organic predispositions to disease, but we do admit that a faulty type of organization or development must occasion a liability to certain forms of disease, under appropriate exciting circumstances. Our

last comment furnishes a reply to the closing portion of this paragraph—nothing can be hereditary except that which is essential to the organism of the animal; but all the organic forms may be faulty, and then, as a natural consequence, liable to deranged or morbid actions.

The existence of any disease indicates the existence, also, of a “faulty type of development;”—in what other way can we explain the fact that some men live to old age without having been sick, while other individuals cannot escape from the most common forms of disease incidental to the climate in which they live. All forms of disease are developmental, except those which exhaust the susceptibility of the system by one or more invasions. In other forms of disease, one seizure increases a liability to a second, a second to a third, until it finally becomes incurable, except by a change of residence. This is as much the case with ague as it is with phthisis.

10. We admit the whole of this paragraph, and for the reason that such circumstances were not provided for in the laws of procreation in mammals; and it is upon the very same ground that we deny that any cause of disease, exciting, predisposing or otherwise, ever becomes a part of the organization.

A disposition to disease, such as is contended for, is just as much a lesion as an incised wound or an amputated arm. The whole arrangement of the organic laws contemplates an exemption from both, and not a disposition to them. A disposition to disease, is not a disposition to health—then, so far as it extends, it is a *disease*—there cannot be established a point of indifference between health and disease, and if, therefore, the disposition be to the latter, can it be regarded as anything less than a lesion?—and let it be remembered that lesions cannot be transmitted.

11. There are in Charleston and New Orleans, as many persons consumptively constituted as there are in Boston, in proportion to the population of these cities, respectively; how does it happen, then, that there are no cases of consumption among the native population of the south? Simply for the reason that a change of temperature and other minor circumstances, have transferred the major action from the lungs to

the digestive system, which is manifested by diarrhea, dysentery, ague and fever, bilious fever, etc. Defective nutrition is not only the cause of the accompaniments of scrofula, but of scrofula itself. He has labored through the preceding pages to show that the hereditary transmission of a disposition to tubercle is a part of that great law which determines that the child's platform or model of life shall be that of its sire; and as that operation of the law is peculiarly incomprehensible, he resorts to the blood for the purpose of finding a solution for the whole subject.

Now, if we admit that we find the "earliest rudiments" and the "latest relics of every organized tissue," it becomes essential to his argument for him to show that the hereditary matter in question is so organized that it can furnish to the blood a rudiment, or a relic—the transmissibility treated of, must inhere in something, and that something must be a tissue, or it cannot be under the influence of the blood. All the organs of the body and all its tissues, hold suitable relations to the blood, and it is true that the blood contains rudiments and relics of all the organs and tissues of the body—but does it contain rudiments and relics of the peculiar transmissibility for which he contends? He may find in it an "epitome" of the nose, eyes, and possibly of the whole body—but can he find the epitome of this hereditary transmissibility of disease? This is the question.

The blood is an elaborated fluid, and therefore it must represent the materials from which it was elaborated and the apparatus that elaborated it; and, we think, it is about as possible for him to discover in the blood, the imperfections of the apparatus that elaborated it, as it would be to discover in a mug of beer the imperfections of the beer-shop.

12. We admit that he has labored assiduously in the *analysis* of this question, and so did the mountain in *labor*—it brought forth a mouse, and he nothing. And we grant, furthermore, that he is correct in his "certainty," that the scrofulous diathesis has its explanation in the grounds he has passed over—that is, in the human system; but we deny that he has discovered it.

13. In the forepart of this article, he appeared quite certain

that he would conclusively develop this mysterious subject, but now he admits that he has not found a demonstration for it.

14. When he first cast his eyes into the blood, and found the rudiments and relics of all the tissues, and even an epitome of the whole being, he appeared quite sanguine that he would accomplish his object, but now his confidence and lengthened argument are reduced to a high probability that "tubercle has its rise in disease of the blood," and in this wise it becomes to constitute a part of the "family likeness." He assures us, that in favor of such a probability there are many facts. We would like to have one fact to show why it should be in the blood, rather than in the nervous, serous, mucous, fibrous, or osseous tissues; but, unfortunately, he has omitted to give us one.

15. We now understand him—the blood is the great agent through which all family resemblance and hereditary transmission of certain forms of disease is perpetuated. It is a very pretty hypothesis, but there exists one serious objection to it, which is this: it is not consistent—and, therefore, it is not true. Any number of boys may be taken to Charleston, S. C., and while each one will retain his family likeness, the whole of them will lose their parental liability to a certain form of disease—and yet there may be no change in their respective organizations. Now, in this case, the blood must undergo a very peculiar change to maintain all the elements of the child's charter of life, except one—the disease and mode of death. The man who can conceive of the possibility of such a change, has, we admit, a very different capacity from ours.

16. We admit it to be very probable, that thirty-six per centum of consumptive patients were of consumptive parentage; but, if we believed the disease to invariably originate in such parentage, we should begin to doubt the truth of our hypothesis if we should fail to trace seventy-two per centum to such an origin; twenty-eight per centum would then be left to be accounted for in the manner in which he has attempted to account for sixty-four. We regard this table as decidedly hostile to his conclusion. But if all of them had

been of consumptive parents, he would have been sustained only in the result, but not in the cause.

If it be true, as we contend, that a certain relation of development between the medulla oblongata and the cerebellum constitutes a liability to this form of disease, under certain influences, as those of a cold climate—and if we shall examine all of them and find the cerebellum to be about the same in all, then the remote cause of the disease, in all, is discovered, and in a manner more satisfactorily than by the unexplainable cause contended for.

By our doctrine, we can comprehend how it is that the same organization can result in two very different forms of disease in two equally different latitudes. But the existing hypothesis explains nothing. If produced by that organic law, which determines the features, complexion, etc., then, it is incurable and unalterable by any medicine or change of circumstances; or else, it must be shown that features can be changed by medication or change of place. It is now well known that neither of these positions is defensible.

We have no occasion to prove that organic forms are transmissible—it is admitted; and, with reference to those who may become afflicted with phthisis, in the north, it is well known that they have in common a similar outline of person, and we only extend the idea a little further, and contend that this morbid condition finds its origin in certain minor or subordinate forms and their relations, under certain circumstances. It follows, then, that by changing the forms and relations, or by changing the circumstances, a security is obtained against the malady. This, as a fact, no one will question at this time.

If this form of disease be hereditary, science can offer neither a remedy nor a prophylaxis, nor any solid foundation for an indulgence of hope, the great sustainer of life—the patient's doom is well established in this respect, as with reference to the shape of his mouth or nose. But, under our views, science dictates a prophylaxis—a certain exercise or change of place or both, and, consequently, a rational foundation for a useful hope.

But the most remarkable circumstance connected with this

subject is, that the doctrine should be as old as the profession, and still in good character, without a single claim to respectability.

We shall continue the use of the word *hereditary*, as hitherto, because it is convenient; but we shall understand by it the transmission of certain organic forms and relations (and when used with reference to disease), which may result in certain forms of disease under certain circumstances. There is always much risk of being misapprehended, when we use a new and more appropriate word to express an old idea, which had been previously known by some other word; and the same is true when we use an old word to express a new idea: but of the two evils, we have chosen the least, and we trust, that when we speak of *hereditary* forms of disease, the reader will bear in mind the sense in which it is used by us. Our explanation is so full that we think none can fail to comprehend us.

SYMPTOMATOLOGY.

SINCE the dawn of Medical Science, the symptoms or characters which indicate particular forms and varieties of disease, have been a leading object with every medical investigator. We have but to reflect upon the multiplicity of the parts, the multiplicity of the degrees of disease or derangement to which each part is liable, and the multiplicity of complications to which all the parts and degrees of disease are subject, to be convinced that such a science as that of Symptomatology can never exist.

Each organ has, however, its own pathognomonic expression, which, like the pathognomy of the face, may be perceived and even comprehended by a practiced observer; but the knowledge thus acquired cannot be communicated to others. Such manifestations of disease as appear upon the surface, may be distinguished and described, because they can be seen; but we can have no such advantage with the pathognomonic indications of internal disease.

In our treatment of disease, we shall treat of such symptoms as are generally found to obtain, and in this place treat of the manner of arriving at a knowledge of the symptoms, and of some other incidental matters.

In every portion of our country there appears to be an abundance of faith in the benefits to be derived from the medication of children, particularly of infants, at the hands of old women and illiterate impostors, with a disposition to repose but little confidence in the skill of the regularly-educated physician.

Instead of denouncing this state of the public mind, we should rather endeavor to ascertain the cause, that we may qualify ourselves for its removal. Old and illiterate physicians and women do, most generally, possess a rich fund of

knowledge which they have acquired by observation, and which, because they have not methodized it, they cannot impart to others in an available manner. On the other hand, reading or learned physicians are not usually so practiced in observation. The former have but few tools, but they are rich in the use of them; while the latter are rich in tools—they possess the accumulations of centuries—but have not acquired the use of them. It follows, then, that patient and accurate observation are just as indispensable to a physician, as extensive and accurate study—without the two combined, no one can hope to become an able practitioner.

It is unfortunate that medical students, too generally, in the course of their studies, come to the conclusion that, as disease in infants is governed by the leading principles of the profession, a special attention to it is comparatively a waste of time. They do not even extend to the professors of this chair that respect which they consider to be due to those of the other departments of their professional education. They seem to be influenced by the principle, that as children are little things, the man who devotes himself to the investigation of their diseases, must possess a mind as much below that of a man, as a child is in age and stature. We are not sure but that a feeling of this kind has more or less pervaded the profession, because that attention which the subject is now receiving cannot boast of a very ancient origin. In this very fact, we should no doubt seek the cause of that general distrust of physicians, in infantile disease, which pervades almost every ramification of society. But students of the present day should remember that the horticulturist who does not understand the cultivation of his young and tender plants will have no fruit. If children are not sound, there can be no adults. It is clear, then, that this neglect or indifference, on the part of students, has been followed by an incapacity on the part of practitioners that has resulted fatally to thousands of children, who, otherwise, might have lived and proved as useful as other thousands have been, who were more fortunate.

Students ought to remember that it is much more difficult to come at a knowledge of infantile disease than at that of adults. The latter can very generally communicate their

feelings and the locations of them, but from the former no such information can be had, consequently their disease requires a closer observation and a clearer discrimination to secure success than is essential to that of adults. The fact that infants cannot communicate their condition, and the fact that they are feeble, are not the greatest obstacles which physicians have to encounter in the management of their disease; but in the more complicated, extensive, and varying range of their sympathies.

In the infant, it rarely happens that any one organ suffers alone, a morbus that is essentially local will so spread its influence throughout the system that it will be found, by the most astute and discriminating, very difficult to detect its primary position. In the adult, the work of development is completed, and therefore it continues much the same from day to day and year to year; but with children there is a restless mutability—their bodies, like those of adults, suffer waste, which must be repaired, and, attending this repair, development has to be effected—new functions are constantly being demanded, and new organs are to be developed to perform them. This is not all. These newly developed organs have absolutely to learn how to perform their respective functions. The organs that exist at any given moment may do their duty, but we cannot infer from this circumstance that those which are yet to come into service will do the same. In this multitude of developments, sympathies, and mutations, lie concealed hopes and fears, which time and proper attention can alone confirm or dispel.

Students of medicine must readily perceive, from what has been said, that, in the midst of so many and varying circumstances, it cannot be an easy matter to obtain a diagnosis of infantile disease, and in this difficulty they ought to discover the magnitude of the advantage to be obtained from a teacher who has had a lifetime practice in the various forms of disease which are incidental to children; and they ought, furthermore, to infer, that this is the first proper step for them to take, in order to acquire a deserved ascendancy over the old women of society.

Now, it is possible for a student to be thoroughly educated in all that pertains to the various manifestations of disease

which he may be called to treat, and yet, when introduced to the suffering infant, he may feel as little at ease, as if he were in the society of mutes, or those speaking a different language from his own. To relieve all those who may become thus embarrassed, is our present object; but before we proceed, we must remark, that those who are not instinctively fond of children (for, as strange as it may seem, little children can as certainly discover their friends, as masons can their brethren), will find it very difficult to reduce to practice any lesson that we can give upon the subject; while those who possess a contrary disposition will soon learn to make their way, even without our aid.

We premise, then, by stating that there is as certainly a pathognomy of disease, as of health or of mental emotion; and dull must be the observer who could mistake the language or pantomime of anger for that of kindness or benevolence. The foreigner, whose language we do not understand, and mutes, who must be dumb, can make known all their wants by signs, and these signs constitute the natural language of the faculties that dictate them.

Now, if it be true that the various organs that unite to make up our bodies, throw off, spontaneously, when in abnormal condition, signs which are expressive of their specific mode of physiological being, then we can understand why an old woman should excel a merely learned or a young and inexperienced physician in the diagnosis of infantile disease.

The importance, however, of pathological pathognomy is not confined to children. The physician who is guided in his practice by the statements of his patients will never succeed in his profession—with all the learning of the schools, he will still be inferior to an experienced old woman.

Beside the ignorance and stupidity which we frequently find among adults, even with reference to their own physiological condition, it often happens that they are not in a state to make any communication whatever. In such cases, therefore, the physician can do nothing, unless he can seize upon the indications of his duty as they are being pathognomonically manifested.

As an illustration, we were, many years since, called to consult with a well-read physician upon a case of protracted

fever—the patient being unable to speak and almost without consciousness. Upon arriving at the house, we met the doctor at the gate, and asked him how his patient was. “In the course of last night,” he answered, “he was seized with pulmonary hemorrhage, and is now, I fear, past recovery.” We proceeded to the door of the patient’s chamber and discovered him lying on the side of the bed, and the blood running passively from one side of his mouth.

Now, it so happens that nature never intended this physician for the practice of medicine, nor any other one who is so stupid as to refer to the lungs a passive flow of blood from the mouth. Before we approached the patient, in the above case, we were sure that some portion of the bucal cavity was the source of the hemorrhage, and so informed the doctor, and the examination that followed discovered it issuing from a hollow tooth. The attention that we immediately gave to the tooth opened the eyes of the wife to the error of the doctor’s diagnosis, and she discharged him. It does appear to us that no one who is not too lazy to think, could commit such a mistake.

The preceding remarks will certainly impress students with the importance of giving a very close attention to every look, movement, sound, and indeed to every variety of manifestation that escapes from a patient, and if possible to investigate the relation that each one holds to the existing disease.

It is a prevailing opinion, that inasmuch as children cannot communicate their feelings to us by vocal signs, the physician cannot come to a knowledge of their disease, and it is a matter of regret that this opinion is but too well founded, in very many instances ; but still it must be deemed as fortunate that such is not necessarily the case.

All persons, without distinction as to age or sex, may be regarded as children when sick, and all can testify how unpleasant it is to have about the chamber one who is blunt, abrupt, or in the least unkind. If such manifestations are unpleasant to adults, what must be their impression upon young children, who seem to be conscious of their dependent and helpless condition. It follows, then, that the physician who is ambitious to be useful, and desires, at the same time, to live by his profession, must first learn to be particularly agreeable

in the sick chamber. His manners, whatever they may be in the drawing-room, should have all the simplicity of those of a child in the abode of disease. Every tone of his voice should indicate kindness and sympathy; and no matter as to what may be the responsibility of his situation, or the danger of his patient, he should never betray, by his manners or the pathognomy of his face, the presence of fearful apprehensions. He should, also, as carefully avoid levity. Cheerfulness should always play upon his face, and to the friends of the sick, nothing but candor should escape from his tongue. In fine, he should be, in the sick chamber, an example of patience, forbearance, kindness, cheerfulness, vigilance, promptness, and decision. While he causes no one to feel restrained or embarrassed, all should feel that they exist under martial law—that his will, and nothing but his will, can be executed. Any yielding to the suggestions of the unprofessional, however few or many they may be—however light or heavy the responsibility, is as unbecoming in a physician, as in a general. He should consider it as imperious to decide upon his duty and do it, without any reflections as to consequences. A comparatively trifling want of decision may lose a battle—and it may lose a patient.

Upon being called to a sick child, the first object of the physician should be to ascertain, under the guidance of what we have taught, under various heads, concerning viability, whether the child is constituted to live. With this view, he will ascertain the vital condition of the parents, the disease with which they have been afflicted, and of which their relations have died. But, in the meantime, he should be seated sufficiently near to the child to observe its manifestations, and to afford it a chance to observe his, for the reason that he will be unable to make any satisfactory examinations of it, before it shall have discovered that he is a friend. During the pauses of conversation with the mother, he should turn his attention, incidentally as it were, to the child—present it some toy as a token of kind feeling, talk to it and play with it. But all this should be done without a suspicion being excited that it is the special object of his visit.

He should ascertain of the mother whether she has lost any children, and if so, of what forms of disease and at what ages

they died. He should particularly obtain the history of his patient, as to general health, dentition, weaning, food, etc. When he shall discover that the child has become acquainted with him—betrays no alarm or excitement when he puts his hand upon it or takes it up, he may safely proceed to make his personal investigations of it; otherwise he need scarcely expect to obtain a normal exhibition of its circulation and respiration.

If the child should be asleep upon his arrival, he should avail himself of the occasion to notice the character of its sleep, the condition of its eyes, as to whether they are closed or partially open, the frequency of its respiration, the temperature of its skin, of its head, and the beat of the pulse. If, while making these observations, he should discover it about to wake, its mother or nurse should be at hand to take his place, and he should so dispose of himself as not to be seen by it upon waking, for the reason that a strange face at such a moment, might be productive of unpleasant consequences.

Without having thoroughly gained the confidence of the child, it is useless to expect to find any portion of its pathological expression, such as it would have been, but for his presence; and for those who are not naturally fond of children, it will be about as difficult as for one to make "sweet sounds," whose musical capacity is feeble. But, under the most favorable circumstances, he should examine the pulse two or three times during his visit, because this function suffers important changes, in infants, from slight and even inappreciable causes.

Certain persons seem to have a peculiar tact in managing children; and it is so: but the explanation has been already given. A man that does not love children, ought not to practice on them, for obvious reasons.

PART I.

MANIFESTATIONS OF DISEASE IN THE ANIMAL OR CEREBRO-SPINAL SYSTEM.

INTRODUCTION.

A REFERENCE to any table of measurements of the medulla oblongata and cerebellum will hardly leave possible room to doubt that those forms of disease which have hitherto been denominated cerebro-spinal, should really be called oblongato-cerebello-spinal, and that the cerebrum has no direct participation in them. Furthermore, they admit of a division into three sub-parts or groups: 1. Into those which result from an equal development of the medulla oblongata and cerebellum—as gout and rheumatism. 2. Those that result from a full endowment of the cerebellum and a feeble one of the medulla oblongata—as obesity, anasarca (perhaps dropsies in general) and probably apoplexy, epilepsy, etc.; and, 3. Those which result from a full endowment of the medulla oblongata with a reversed condition of the cerebellum, as tuberculosis and its kindred manifestations. These conclusions, we contend, are authorized by cranial measurements and observation upon disease and its results.

We regret exceedingly that we are unable to make such a classification of the clearly recognized forms of disease. In the reports of such forms, we have barely found enough, incidentally thrown out in their history, with what we have observed, to feel assured of the practical advantages that would result from such a classification, correctly made; it would be equivalent, so far as etiology and prophylaxis are involved, to all that has been done.

As we have remarked, we are unable to adopt such a classification, and yet, in the following treatise we may be able, without much risk of error, to designate the primary or organic cause of many of the classes or family forms of disease, but we shall not do it with a view of present advantage to therapeutics, so much as for the purpose of exciting or inviting observation to the subject.

The more system we can get in the arrangement of diseases, the more easily shall we be enabled to comprehend them. There is very much improvement to be anticipated in this, as in other departments of medical science; and we are not so sure but they will all be traceable to the improvement in this particular department. We would suggest to practitioners, to note such facts as serve to illustrate the subject, and, as far as they can, use them as tests of the correctness of our views.

CLASS I.

MANIFESTATIONS OF DISEASE IN THE CEREBRAL APPARATUS.

INTRODUCTION.

THE exalted position which the cerebral apparatus has ever held in the estimation of physiologists, either because of their conception of its superior importance, or because of the exceeding difficulty that attends its investigations, pathologists have, we think, most generally, commenced their nosological classifications with its manifestations of disease.

Professor Meigs tells us, that “the source of all vital power is in the nervous mass—whether the cord, or its bulbs, the great sympathetic or the plexuses, or the nervous tractus, wherever situated.”

We have been in the practice of admitting the truth of this doctrine when viewed with reference to man's social relations and the great purposes of his existence; but when we have meditated upon the subject of animal life—animal power, we have hitherto maintained that the lungs constituted the great indispensable. The indispensability of oxygen to life—the immediate certainty of death without it—the indispensability of oxygen to all the nutritive processes—its agency in death, and the necessity of it to the production of great animal power, had brought us to the conclusion that the lungs, the apparatus that provides the oxygen, constituted more thoroughly their importance—a *sine qua non* to vital existence—than any other organ in the system.

In support of this conclusion, we had observed that attempts to restore suspended animation, most generally, consisted of efforts to re-establish respiration—that animal motion appeared to hold the same relation to the diaphragm, that steam machinery does to the piston. We had also observed, that in

the lowest departments of animal existence, we often met with a high degree of vitality with a mere trace of cerebral apparatus. Add to the preceding facts the circumstance that human greatness is never found unassociated with a highly endowed respiratory apparatus, and the conclusion that most plausibly presents itself is, that oxygen, if not life, is so inseparably connected with it, as to give the lungs more importance in the phenomena of life, than the brain and its associated parts. We could not avoid the conclusion, *cæteris paribus*, that as the quantity of steam was the measure of power in any given machine, so the quantity of oxygen was the measure of the power of any given animal organization.

In harmony with this conclusion, we had seen powerless heads as large as those of Washington, Napoleon, and Scott, and that we had met with great men, comparatively, with small or moderately-sized heads; but in no instance had we found efficiency of character associated with a feebly-endowed pulmonary system.

These views were entertained by us until we discovered the dependence that exists between the medulla oblongata and cerebellum, acting in co-operation, and the pulmonary system. In this, we discovered that all the vital influence of the respiratory function was imparted by the previously-named organs; their development became to us the measure of the respiratory function.

But, notwithstanding this conclusion, there is ample room left for debate, as to which of the three great functions, the respiratory, the circulatory, and cerebral, is the most indispensable to present existence. Without properly-elaborated blood, there is no cerebral action; and without respiration such blood cannot be produced, and when produced it is of no vital purpose without the cerebral function. The three systems constitute a circle, and each is indispensable to life—to present or momentary existence.

Separate and apart from these considerations, there yet remains one which decides that we should commence the consideration of disease with those manifestations of it which appear in the cerebral apparatus; and that is: it presides over and regulates all the apparatuses of animal life and greatly influences those of the vegetative.

Dr. West says, "beside the general interest and importance of these affections (cerebral), at whatever age they may occur, their extreme frequency in early life gives them an additional claim on our notice."

He continues: "It appears from the fifth report of the register-general, that 7,603 out of 45,000 persons who died in the metropolis during the year 1842, were destroyed by the various forms of disease of the nervous system. But 4,847 of these deaths took place during the first five years of existence; or, in other words, sixty-four per cent. of the fatal disorders of the nervous system occurred within that period."

Now, it may be inquired, what are the causes of this mortality from the cerebral forms of disease? We answer, none has been assigned, except such as are equally applicable to all the other apparatuses of the system. Their true causes remain veiled in impenetrable darkness. It is now time, however, that this veil was thrown aside.

We have shown, page 20, that the power of the respiratory and circulatory functions depends upon the medulla oblongata and the cerebellum. Now, suppose these apparatuses to be too feeble to sustain all the functions of the body; sixty-four per cent., Dr. West informs us, died of nervous disease under five years of age; now, if we subtract from this sum those who would have died but for the physicians, the natural mortality would probably be reduced to thirty-five per cent.; and this mortality may be assigned to an inherent want of viability (the consequence of violated law), which is invariably indicated by a feeble chest or very small cerebellum, more especially if the cerebral hemispheres are large; or it may equally depend upon a large cerebellum and a small medulla oblongata, attended by more or less of obesity, up to the invasion.

If physicians shall find that we have truly indicated the source of vital power—viability—they will find no difficulty in detecting, in most cases, the causes of infantile disease and mortality, more especially if they will extend their observations to the parents, individually and relatively.

ORDER I.

INFLAMMATORY FORMS OF CEREBRAL DISEASE.

GENUS I. — ENCEPHALITIS.

Simple Inflammation of the Brain.

We use this term to designate an inflammation of the parts contained within the cranium; we shall not stop to inquire whether it is confined to the meninges or to the substance of the brain, because it may or may not involve the whole, and, further, a distinction can subserve no practical therapeutical purpose. Post mortem examinations generally reveal more obvious signs of inflammation on the surface and in the ventricles than in the substance of the organ; but this does not prove that the substance of the organ was not invaded, because it is possible and even probable that important, but inappreciable, changes may have been effected by the inflammation.

With infants and young children, this malady is thought to be very generally confined to the base of the brain; we should, *a priori*, expect this to be the case, because it can scarcely be supposed that any organ could be much disposed to morbid action before it became so organized as to perform the function for which it was intended, and this is not the case with the cerebral hemispheres in infancy; but the first moment of extra-uterine existence calls into requisition the *basilar* portion of the brain. In a majority of instances, it is stated, that the ventricles also participate in this inflammation.

The symptoms, however they may vary in different cases, are strongly marked; and the disease is, perhaps, more likely to attack children in full and apparently good health than in the feeble and emaciated. In many cases, it commences, apparently (for the previous phenomena may not have been observed), with the most violent convulsions; in other cases, after a few hours or a day of restlessness, they supervene; in others, the first admonition consists of nausea and vomiting, and they may continue for a day or two, or they may speedily cease, or they may mark the whole course of the disease. All ingesta received into the stomach, no matter how bland, is thrown up. Usually there is much constipation. The

convulsions are, in some cases, continued almost without intermission to the close of life. In some cases febrile excitement is present at the beginning, or, if it is not, it soon makes its appearance and continues without remission to dissolution, which is rarely procrastinated beyond a week.

As an illustration of this violent malady, we have deemed it proper to extract from Dr. Abercrombie's treatise on cerebral disease the history of one case.

"A child, aged 2 years, 21st May, 1826, was suddenly seized in the morning with severe and long-continued convulsions. They left her in a dull and torpid state, in which she did not seem to recognize the persons about her. She had lain in this state for several hours, when the convulsion returned, and during the following night it recurred a third time, and was very severe and of long continuance. I saw her on the morning of the 23d, and while I was sitting by her, she was again attacked with severe and long-continued convulsion, which affected every part of the body, the face and eyes in particular being frightfully distorted. The countenance was pale and expressive of exhaustion; the pulse frequent; her bowels had been freely opened by medicine previously prescribed by Dr. Beiby, and the motions were dark and unhealthy. Further purging was employed, with topical bleeding, cold applications to the head, and blistering. After this attack, she continued free from convulsion until the afternoon of the 23d; in the interval she had remained in a partially comatose state, with frequent starting; pulse frequent, but pupil rather dilated; she took some food. In the afternoon of the 23d, the convulsion returned with great severity; on the 24th, there was a constant succession of paroxysms during the whole day, with sinking of the vital powers; and she died in the evening.

"On removing the dura mater, the surface of the brain appeared in many places covered by a deposition of adventitious membrane between the arachnoid and pia mater. It was chiefly found above the openings between the convolutions, and in some places appeared to dip a little way between them. The arachnoid membrane, when detached, appeared to be healthy, but the pia mater was throughout in the highest state of vascularity, especially between the convolutions; and when

the brain was cut vertically, the spaces between the convolutions were most strikingly marked by a bright line of vivid redness, produced by the inflamed membrane. There was no effusion in the ventricle, and no other morbid appearance."

CAUSES.—This form of disease is not of very frequent occurrence in infancy, and hence its causes, at this period of life, are not well understood. It has been known to occur in children from exposure to the sun in hot weather, and, also, during apparent convalescence from scarlatina, but most frequently no cause can be assigned. We think it very probable that its occurrence is measurably confined to the rheumatic constitution—a high endowment of the vital forces. After the second year, it is seldom manifested until after puberty. Dr. Wood says, that "it is singular that the tendency to tuberculous meningitis is exactly the reverse, being greatest between two and fifteen." It would not have seemed strange to him if he had known that the first is associated with a full endowment of the vital forces, and that the latter is always associated with, and primarily caused by, a feeble condition of them.

DIAGNOSIS.—This form of cerebral disease is more liable to be mistaken for tuberculous meningitis, but as the former occurs with high vital forces, and the latter with feeble and scrofulous, there is no necessity for such an error. The former is, furthermore, in its early stages, attended with more acute symptoms, as heat, thirst, delirium, etc. The initiatory stage of both of them may be confounded with several febrile affections, as small-pox, enteritis, etc.

PROGNOSIS.—This is always to be regarded as a dangerous affection.

INDICATIONS.—These most evidently consist in causing a determination of the blood outward and downward—in diminishing the action of the arterial capillaries, and increasing that of the venous radicals of the brain and its meninges, and ultimately to secure a normal equilibrium of action.

TREATMENT.—When we reflect that fever and inflammation are but obstructed general and local vital actions—accumulations of vital force to remove obstructions to secretion and absorption, there can remain no doubt as to the proper plan of treatment.

We recommend, therefore, that the scalp be thoroughly cleansed of all dirt and dandruff by vinegar washes and a comb, that it may become properly impressible to external agents and the vital actions of the system. To promote the venous and reduce the arterial actions, the patient should be subjected to, and continued in, a warm bath, until symptoms of syncope are induced, and then put to bed; much care should now be taken to keep the head cool by cloths saturated with a mixture of vinegar and water, or by constant sponging—the latter is preferable, because it admits of and promotes constant evaporation—a more cooling process than an unventilated application of cold substances. It is a very general practice to surround the head with ice; but to this we have the same objection that many thinking and discreet physicians have to blistering the scalp in this affliction. As a source of irritation, it is not inferior, perhaps, to water so hot as barely to avoid vesication, and in this, as in all other forms of disease, all causes of irritation that are not revulsive should be avoided.

As soon after the warm bath as practicable, the bowels should be stimulated by enemas, and the inferior extremities kept warm with as much care as must be bestowed in keeping the head cool.

As a further means of inviting circulation and irritation from the brain, the abdomen, lower portion of the spine, and inferior extremities should be kept covered with emollient substances, as a bread-and-milk or corn-meal poultice, sprinkled with mustard or cayenne, to a sufficient extent to produce redness without vesication.

Purgatives, in this form of disease, can act in co-operation with the rubefacients, in promoting a determination of vital action from the brain, and for this purpose, and no other, are they admissible, in violent cases, where the native forces of the system are such as not to seriously contra-indicate their weakening influence; consequently, the hydrogogue cathartics should be avoided. For this purpose, we would suggest the use of the compound powder of Jalap and Senna, or Podophyllin, or Podophyllin and Leptandrin combined, either of which is to be used in small doses to avoid active catharsis;

in many instances stimulating and laxative enemata may be given.

In the meantime, or as soon as the inflammatory action reappears upon the surface, after the employment of the warm bath, all parts of the surface, not acted upon by rubefacients, should be kept moist, or in an evaporating condition, by sponging them with an alkaline solution of such a temperature as to be agreeable—not omitting a frequent resort to warm pediluviums; nauseating antispasmodics should likewise be so administered as to aid the other means to keep down excessive action and promote an equilibrium of the circulation in the system.

When the most urgent symptoms have abated, a more permanently depurative practice should be adopted—such as the use of tonic and stimulating alteratives, as Xanthoxylon, Myricin, Hydrastin, and, in some cases, Quinine combined with one or more of the above articles.

℞. Xanthoxylon,
Hydrastin,
S. Quinine, āā gr. j.,
Sacch. Alb., q. s. to make a powder,

when the articles are triturated together; and which may be divided into from two to six or eight doses, according to the age of the child, and given three or four times a day. In some cases the Cornine may be substituted for the Quinine with advantage.

This is the plan of treatment which we have found more generally successful, in this so commonly fatal disease, than any other which we have investigated.

We would remark here, that the application of blisters to the head, a practice so universally recommended, and as universally fatal, cannot be too highly deprecated. During a practice of many years, we have never known a child to recover in whom the scalp had been shaved and a blister applied, and such is likewise the result of the observation of many of our oldest eclectic practitioners. During the urgency of the case, it will be well to use Gelsemin, in half-grain doses.

GENUS II.—ACUTE HYDROCEPHALUS—

Complicated Inflammation of the Brain.

We have stated that Encephalitis is not a frequent form of cerebral disease in infants ; but Acute Hydrocephalus is, and it never occurs except in phthisical or tuberculous constitutions. It is stated, by pathologists, that in a large majority of cases, the inflammation is so predominant at the base of the brain, as to be regarded by some as pathognomonic of a scrofulous condition of the organ. But this peculiarity is said to be a very frequent condition of Encephalitis. This, *a priori*, we would expect, because it is not reasonable to suppose that much disease would invade the hemispheres before they are sufficiently developed to perform, to an appreciable extent, their functions. The base of the brain, and that only, is called into requisition to much extent during infancy and childhood.

To the usual evidences of cerebral inflammation, may be added, in this form, opacity and thickening of the membranes, serous effusions into the ventricles, varying in quantity from very little to six ounces, and softening of the cerebral substance. In this form, furthermore, there are deposits of small and apparently compressed or flattened points of the size of millet seed, which appear friable under pressure, and closely resemble the gray granulations occasionally seen in the lungs or pleura of phthisical people—they are of a grayish or yellowish color, and semi-transparent and resistant. In proof that this is tubercular matter, Dr. West presents briefly the following results of observation :

“First: That they are always associated with tubercle elsewhere.

“Second: That their abundance is not proportioned to the amount of inflammatory mischief.

“Third: That they are sometimes met with in cases where no head symptoms were observed during life, and unconnected with any sign of inflammation discovered after death ; and,

“Fourth: That their chemical composition and their microscopic structure are identical with tubercle in other organs of the body.”

If we were to divide this disease into two stages, we should

have all the indications, during the first, of inflammation of the brain or some of the parts; and during the second, all those which are characteristic of serous effusions and cerebral softening. Divide it as we may, and much confusion will still exist; if we adopt the above division, we shall often find both sets of symptoms to be attendant upon both causes. While effusion is taking place in one part inflammation is extending in another, and thus much confusion may result.

Some divide it into three stages: that of *increased sensibility* — *diminished sensibility* — and the third is that of *palsy* and *convulsions*. It has also been divided into four stages: that of *turgescence*, *inflammation*, *effusion*, and *palsy*. But the same difficulty attends the whole of them. These efforts at elucidation prove, however, the difficulty that attends the subject.

We shall assume that it is divisible into three stages, and among the first indications of its existence is the application, by the child, of its hand to its head, followed by such a cry as indicates severe pain—the motion of the hand to the head leads us to infer the location of the pain. Following or attending this symptom, we may probably observe restlessness, an indisposition or inability to sit up. Its sleep is unquiet and often broken by starts and screams, and attended frequently by a grinding of the teeth. When awake, it shuns the light and evinces an indisposition to be disturbed and an impatience to noise. The scalp is hot and the pupils are contracted. The appetite is whimsical or totally lost, the breath is offensive, bowels are constipated, the stools are green, or tar-like and black, the urine is highly-colored and generally scanty, the tongue is white, vomiting very commonly attends this stage, but the most pathognomonic symptom is said to consist in the change of the stomach from a tumid and tender condition to one of flatness or apparent emptiness, and that, too, without alvine excretions. The pulse is also regarded as another remarkable symptom, being exceedingly frequent and sharp. These symptoms leave no doubt that the inflammatory action is going on in the brain, but the period of their duration is uncertain—they may continue one, two, or several days, but rarely longer than a week, before they become replaced by those that distinguish the second stage.

As the second stage approaches, the pulse is said by some to become less frequent, until finally its beats are slow and irregular, but others assert, that with its irregularity it increases in frequency. No great importance, we apprehend, when taken alone, is to be attached to it. The face now becomes expressive of extreme anxiety and suffering—there is an increased aversion to any kind of annoyance—it seems only desirous to be let alone, its eyes are generally closed to keep out the smallest ray of light, its condition is drowsy, if old enough to speak, it will complain of its head, all questions are answered rationally and briefly, its disposition is very irritable, but when quiet and undisturbed, it moans in a low tone, which is, very frequently, interrupted by a sharp, suffering cry; sometimes, instead of the moan and plaintive cry, there will be screams, which are so toned as to indicate the intensity of the pain. As night approaches, the symptoms usually become more violent, and the patient becomes noisy, vociferous, and delirious, but this is not always the case; sometimes the only obvious change is an increased restlessness. Vomiting, which was a troublesome and a painful symptom during the first stage, is apt to cease upon the introduction of this—the bowels have, if anything, become more obstinate in their constipation, and the evacuations continue equally unnatural, but all flatus has disappeared.

Before the conclusion of this stage, the pulse becomes less frequent, and with it an increase of insensibility with heaviness and stupor, the light ceases to be troublesome, vision becomes imperfect, and squinting commences, it lies with its eyes half-closed, convulsions frequently occur, paralysis supervenes, the excrements are passed unconsciously, it picks its lips, or bores its fingers into its nostrils. This stage is rendered remarkable by remissions which occasionally characterize it—but these are sometimes gradual, at other times sudden and always deceitful; the indications of convalescence are sometimes sufficient to inspire hope, and yet, in a day or so, a relapse supervenes and a deeper coma dispels all expectation of recovery. This stage may continue a week or two.

The next and last stage differs but little from the preceding, except that the pulse becomes again very frequent—as frequent as two hundred strokes per minute. One part of the

body will be hot and dry, while a cold sweat pervades another, convulsive twitchings take possession of one side and paralysis of the other, one cheek is flushed and the other is pale—feebleness rapidly marks the pulse, and death supervenes quietly or in the midst of convulsions. This third stage is very indefinite in its duration—lasting in some instances only a few hours, and at other times a week or ten days. The greatest duration of the disease, from the time the symptoms become well defined, is set down at about twenty-one days—terminating in some cases in four or five.

In view of the symptoms and peculiarities of the three stages, as above described, it becomes proper that we should caution our readers against indulging a hope or expectation that they will ever witness the three stages to appear and progress exactly as we have described them, or that they will find, in every instance, the symptoms to be exactly in the place we have assigned them.

Many of the symptoms which we have assigned to the second stage may occur in the first, and the reverse. A difference as to their date and the order of their occurrence must be expected—certain symptoms, though never altogether absent, may occur early in one case and late in another. Convulsions, per example, which are scarcely ever absent, may not appear at the same date in any two cases, nor be attended with the same phenomena. In one patient, they may convulse only one side; in another, the whole body. In one instance, they may be succeeded by a stiff and contracted state of the extremities, and in another by paralysis. But, however greatly the symptoms may be modified, in different cases, no error can be made as to the disease they collectively indicate—no mistake can be indulged as to the dangerous nature of their source.

CAUSES.—For the opinions of many on this subject, we refer to other and more voluminous works, and in this place record our own notions about it.

We do not doubt but that it very often depends upon a tubercular diathesis, and is therefore hereditary; but what is the condition of such a diathesis? To refer this form of disease to such a diathesis, is leaving the cause as much in the dark as it was before.

Such is the condition of the vital forces in all these children, as to place them in the third class, which entitles us to the opinion that this form of disease depends upon an imperfect pulmonic depuration. The skin aids in this depuration, more particularly when in a state of eruption, and it is known that a suspended cutaneous eruption will produce this form of hydrocephalus; and so may the arrest of any other secretion that gives aid to the lungs—as the deposition of adeps.

DIAGNOSIS.—As this form of disease, as we have before remarked, rarely if ever attacks the strong and healthy, so those who have previously appeared healthy may only have been obese. Hence it is that children of a scrofulous diathesis will gradually lose the rose and flush of health without any assignable cause, and when they have become sufficiently reduced by the disturbance occasioned to the nutritive process by the tubercular development, then Acute Hydrocephalus takes possession of the case.

While, therefore, the physician is watching this wasting condition of his patient, he should be sufficiently vigilant as to anticipate the possible result, and this certainly is not a very difficult task when we have a knowledge of the parental diathesis or organization.

Perhaps the patient has been tolerably well, until very recently, when it had an attack of febrile symptoms, attended with constipation, headache, and possibly vomiting; now, it would not be entirely unlikely that the case might be mistaken for one of remitting fever, and the only existing circumstance that should excite suspicion in the premises is the parental diathesis, which can always be known. If the patient be under five years of age, the physician may still more strongly suspect that it is not remittent fever, and if it be under three years of age, he may feel quite sure that it is not.

As the human temperaments have, hitherto, been a sealed book, but little observation has generally been had upon the subject of human constitutions in general. As the seal is now broken, as we confidently believe, we entertain a sanguine expectation that observation will be commenced, and when a habit of the kind is formed, it becomes one not only of agreeable interest but of useful instruction. It has become as natural for us to observe the constitutional peculiarities of

every one we meet, as it is to breathe, and certainly it consumes neither time nor money.

If the physician will impress upon his understanding the peculiar symptoms that attend a remittent fever, he need not be long in doubt as to the character of the case before him, even without a knowledge of the circumstances we have named. Some cases of gastric disorder considerably resemble the incipient stage of Acute Hydrocephalus, but then, there are such differences as should prevent any mistake.

To distinguish this form of cerebral disease from simple Encephalitis, we refer to the diagnosis of the latter.

PROGNOSIS.—Upon this topic we have but little to say, further than that it is, according to authority, very generally unfavorable; for under every known treatment, and under every other known condition, it generally proves fatal sooner or later; the number of exceptions only serve to enable us to say that it is not absolutely incurable.

We are so well satisfied that this form of disease originates in a non-viable condition of the system, as to give it as our unqualified opinion that it is never curable, and that those who have been supposed to have recovered from it never had it. It is possible, however, that a few of the stronger of this class may recover from the less actively inflammatory stages of the affection, but it can only amount to a very short procrastination of death.

TREATMENT.—As this affection so generally proves fatal under any treatment, we can do nothing more than to suggest a course similar to that recommended for Encephalitis, and would take occasion here to remark, that notwithstanding the general application of blisters in such cases, they have proved as unsuccessful as in Encephalitis.

The following course has been adopted by several practitioners and occasionally with advantage.

Alkaline bath to the surface, with considerable friction in drying; bowels kept soluble; diaphoresis maintained by means of spirit vapor-bath; compound tincture of Virginia Snake Root, and warm effusions of Spearmint, Crawley Root, etc.; local applications to the head of cooling lotion, tepid or cool, as indicated by the effects, and in some instances warm

fomentations of Hops, or Stramonium leaves applied to the whole head. Give the following:

R. Tinct. Gelseminum, gtts. xx.

Spirit. Nitr. Dulc., 3 ss. mix.

Of this five drops may be given to a child one year old, in an infusion of Parsley root, and repeated three or four times a day. All sources of irritation must be avoided; if teething, the gums must be cut; and a change of the nurse's milk will be frequently of service.

ORDER II.

NON-INFLAMMATORY FORMS OF CEREBRAL DISEASE.

GENUS I.—CEREBRAL CONGESTION.

Congestion of the brain is produced by two distinct sets of causes, and consequently produce two distinct forms of disease. One variety may be produced by any cause that can increase the flow of blood to the brain, and when thus produced it is called active congestion.

The other variety of cerebral congestion may be produced by any cause that can prevent or retard the reflux of the blood, and when produced in this way, it is called passive. As these two forms are very unlike, it becomes requisite to treat of them separately.

SPECIES I.—*Acute Cerebral Congestion.*

The period of dentition being one of much vascular irritation, is not unfrequently attended, even from slight causes, with such cerebral congestion as to produce apoplectic symptoms and even convulsions. Such symptoms precede, or are introduced by, the eruptive fevers. Acute congestion of the brain is sometimes very rapidly produced—manifesting from the start such symptoms as indicate an immediate demand for medical attention. In other instances, it may seem to have commenced as suddenly, and yet, though unobserved at the time, but afterward remembered, that the alarming portion of the attack was preceded, for several days, with manifestations

of uneasiness—some derangement of the bowels, either too loose, or, more probably, too constipated, and possibly with some febrile disturbance.

At other times, these symptoms will gradually increase until they attract attention—the child has become more restless, troublesome, and fretful, and endeavors to evade the light, places its hand to its head, and if old enough to speak, it will complain of its head, which upon examination will be found to have increased in its temperature. That vomiting which was characteristic of more sudden assaults, now supervenes; the pulse, though in young children rarely ever trustworthy, is usually quick, the attending fever is variable in degree and attended with considerable irregularity in its exacerbations. The child's sleep is not natural or healthy, its facial muscles twitch, it starts upon waking, and if the anterior fontanelle be unclosed, strong pulsations of the brain may be observed.

Such paroxysms as this may be frequently seen with children during the period of dentition, and after continuing several days may even pass away without any medical attention.

Notwithstanding that such paroxysms sometimes pass off without inflicting more serious mischief, yet we are not to make such calculations, because just such symptoms as those above detailed, very frequently indicate a formidable mischief, one that may have been accumulating for months, and which is to end, possibly, and even probably, in acute hydrocephalus. And, although all of the hitherto enumerated symptoms may subside—pass entirely off, and thereby inspire the most sanguine hopes, yet we should look out for the supervention of another and a very different set, to introduce what may be designated the second stage.

As the disease emerges from the first stage, as the heat of the head may diminish, and the flush become slight and less constant, we may observe stealing over the patient an indifference to all objects of sense, with an increased weight and anxiety of the countenance and an increasing tendency to torpor. The bowels are still more or less constipated, and the vomiting is still in attendance, but probably less frequent than in the first stage. Sometimes the second stage is introduced by an attack of convulsions, and if not, the state of torpor

may gradually pass into one of convulsion, and after each repetition of the latter the torpor becomes more deeply founded, until finally coma supplants the convulsive tendency and closes the scene. This finale may supervene the first fit in forty-eight hours, or the disease may be procrastinated for several weeks, and even then recover. It is thought that in cases of such procrastination, the cranial sutures and fontanelles are not completed, and that the congestion is relieved by an effusion of serum into the ventricles, the yielding condition of the cerebral parietis admitting of easy adaptation to the corresponding increase of the mass. If we admit this solution to be the fact, we have an exchange of an acute form of disease for a chronic one—the congestion has produced hydrocephalus, an affection which is not always, but most generally, fatal.

When the exanthemata are introduced by cerebral symptoms, the danger for a time must be considered as very great, but under such circumstances we know that if we can remove the congestion we will save the patient by the aid of the eruption that will soon follow. The attending vomiting may be a symptom of cerebral disturbance, or it may be consequent upon the ingesta of some indigestible substance. This is a matter which must not be overlooked by the attending physician, because an emetic in the first instance is as strongly contra-indicated, as it would be indicated in the second.

As cerebral congestion results from such a variety of causes, it is obviously impossible to prescribe a definite course of treatment; consequently, the physician is required to summon to his aid all the vigilance, discrimination, and judgment he can, inasmuch as a course of treatment that would be wisely adapted to one case, might prove destructive in another. Thus, if the convulsions have succeeded to mechanical violence, inflammation is much to be apprehended, and therefore an energetic treatment is demanded; but, on the contrary, if they have succeeded to long-continued gastric or intestinal irritations, or should occur during the dental process, the danger is to be apprehended from doing too much rather than not enough.

CAUSES.—The causes in this form of disease may be the same as those of simple encephalitis, acting under a modifi-

cation of circumstances. It is probably confined to those who possess a strongly-endowed vital system. Beside falls and blows, it may be produced or excited into action by almost any source of irritation that may be directed to the brain, as suppressed discharges, solar or artificial heat, and the various irritations common to the dental period.

DIAGNOSIS.—The physician who will observe the difference of cerebral conformation between the heads of those who are, respectively, suffering under the active and passive forms of congestion, will never afterward confound them. In active congestion, the face will give evidence of vital existence by its flushed condition, suffused eyes, and generally turgid appearance. For further diagnosis, see the next or second species.

PROGNOSIS.—If we were to draw our conclusions from the practice we have observed, we should conclude very unfavorably as to the prognosis in this form of disease, and yet there is nothing inherently indicative of danger in it. The vital force is, in general, adequate to the removal of the congestion, at least with a little professional aid, and when it proves fatal, it should be charged to the profession, as not having discovered the proper treatment, or in adopting an erroneous one—such as we consider bleeding and mercury to be.

TREATMENT.—The indications for treatment are to overcome the spasmodic condition of the vascular system, which will produce an equalization of the circulation, and thus relieve the congested state of the brain by diverting the circulation from this organ; also, to remove all local irritations, whether gastric, intestinal, or dental.

To fulfill the first indication, we commence with a free and repeated use of the warm bath, in connection with nauseants: as,

R. Syrup of Squills,
 Syrup of Senega, $\bar{a}\bar{a}$ \bar{z} ss,
 Tinct. Veratrum, \bar{z} j. Mix.

Of this, sufficient should be administered to produce nausea, say from ten to twenty drops to a child one or two years old, and which may be repeated sufficiently often to keep up the nausea and accompanying diaphoresis. We prefer this combination, inasmuch as it tends to prevent the recession of the exanthema so common to this affection, and which

recession is much to be dreaded and must always be carefully watched.

R. Podophyllin, gr. j,
Scutillarin, grs. v.
Sacch. Alb., ʒj. Mix.

Triturate thoroughly, and divide into twelve powders; of these, one powder should be administered three times a day, or sufficiently often to allay the irritation; the laxative effect of this preparation will, in many cases, take place in from twenty-four to thirty-six hours; if it should prove too active in its operation, the intervals between the doses should be lengthened.

If the gums are swollen, they must be cut; and the practitioner should always attend to this matter in children during the period of teething.

The whole surface of the body must be bathed often with a weak alkaline wash, and in drying use considerable friction. In some instances, ligatures to the extremities will be found beneficial, and care should be taken that they be not applied too tightly, or removed too suddenly.

Cold, or moderately cold applications must be applied to the head; but in their employment, we should carefully guard against producing a chill, either by having them too cold or by allowing them to remain too long. In connection with these, the extremities must be kept warm by warm foot-baths, stimulating liniments, or mustard.

In many instances, the compound tincture of Virginia Snakeroot may be used with benefit, for the purpose of allaying that irritability of the system which favors this form of congestion, as follows:

R. Comp. Tinct. Virg. Snakeroot, gtt. x,
Aqua distil. f. ʒj. Mix.

Of this, a fluid drachm may be given every three or four hours to a child five years old.

Or the tincture of Aconite, or tincture of Belladonna, may be administered for a similar purpose; thus,

R. Tinct. Aconitum, (or Belladonna), gtt. viii,
Aqua Distil, f. ʒiij. Mix.

A fluid drachm of either of these may be given every three or four hours. If dilatation of the pupils should be produced by

the use of these agents, the doses must be lessened and the intervals between the doses lengthened, or they must be omitted altogether.

If convulsions are present, place the child in a warm bath, and administer antispasmodics, as the tincture of Lobelia and Capsicum Tr. Veratrum or Tr. Gelseminum may also be added.

In all cerebral diseases, both during the attack and the convalescent stage, the room of the patient should be kept darkened and perfectly quiet, and everything calculated to vex or irritate the patient must be avoided. All diet of an irritating character should be strictly forbidden.

The severer symptoms having abated, the same tonic and stimulating course may be pursued as recommended in treating of encephalitis; as follows,

Xanthoxylin,
Hydrastin,
S. Quinine, aa gr. j,
Sacch. Alb., q. s.

to make a powder when the articles are well triturated together; and which may be divided into from two to six or eight doses, according to the age of the child, and given three or four times daily.

In the treatment of this disease, success mainly depends upon the judgment of the practitioner in the timely administration of remedial measures.

SPECIES II.—*Passive Cerebral Congestion.*

Although no age is exempt from this form of congestion, yet it occurs much more frequently immediately after birth, and certainly no one can be puzzled to understand why this should be the case. In many still-born children, the swollen scalp and livid face indicate the extreme congestion of the cerebral vessels, that produced the fatal result by sanguineous effusion upon the surface of the brain. When, in a living infant, there is great lividity of the face, and the actions of the heart are feeble and of lengthened intervals, there would be reason to fear that cerebral congestion was present. Just in such cases as this, death sometimes takes place without a single respiratory movement being made.

When this congestion of the brain has continued for some

length of time, a sanguineous exhalation is effected upon the surface of the meninges, which, by coagulating, creates pressure on the brain, producing symptoms characteristic of apoplexy. But the effusion takes place most generally into the arachnoid cavity; sometimes a very large quantity of blood is discharged there, and if death should speedily succeed, the blood will be found unchanged, but otherwise the serum and crassamentum become separated, and the latter, after a further time, loses its coloring matter and passes to the formation of a false membrane which is in close apposition with the parietal arachnoid. When the effusion has been inconsiderable, the serum becomes absorbed, and the only indication remaining to show that the disease has existed, is the false membrane lining a portion of the arachnoid. In the event the serum is not absorbed, it may become encysted, or it may continue in the arachnoid cavity, and if the quantity be great, the cranium may enlarge as in chronic hydrocephalus.

The symptoms indicative of an effusion of blood upon the surface of the brain, are generally obscure. Paralysis may or may not be present, nor will the occurrence of convulsions, and their frequent repetition, or their alternation with spasmodic contractions of the extremities, be a sufficient indication disconnected from other circumstances and the general history of the child. If great feebleness in the manifestation of the vital forces has from birth characterized the child, the affirmative, under the symptoms above given, may be strongly suspected. Post mortem examinations prove these effusions to happen much more frequently with exceedingly feeble children than otherwise.

Upon this subject, with adults, there is, even in the profession, a wide-spread error. It is in this: that a great fullness, of what is called health, with a large chest, small head, and short neck is associated with apoplexy, and that a constitution of a contrary character is, absolutely, exempt from it. Than this, no greater error could exist in the profession. We admit that active congestion is associated with the first; but apoplexy, from passive congestion, occurs with a class of men who are constitutionally and organically the opposite. We can give an illustration of this, attended by such circumstances as will forever impress it upon the mind of the reader.

Sometime about the close of January, 1840, in Holly Springs, Miss., A. H. Powell, Esq., called upon the writer for his phrenological opinion of himself. The said Powell possessed the sanguine encephalo-bilious constitution, with a very considerable preponderance of the encephalic element; accordingly, his head was large, neck long and slender, and chest small. The opinion given of him, by the writer, was written, and one of its items consisted of an injunction to avoid intemperance, particularly in the use of ardent spirits, or the consequence would probably be, at the close of some debauch, apoplexy.

This opinion he exhibited to his medical friends, who assured him that such an organization was never known to have apoplexy—that the phrenologist might understand his subject, but that he could not be a well-informed physiologist.

In a little more than two months, we received the following letter from Hon. J. W. Chalmers, which reveals the remaining history of this matter.

“ HOLLY SPRINGS, MISSISSIPPI,
Monday morning, April 6, 1840.

“ PROF. POWELL:—*Dear Sir*—We had, on Saturday night, a most fearful confirmation of your foresight and discrimination in the phrenological opinion given by you upon the examination of the head of our distinguished professional brother, Alfred H. Powell, of Holly Springs. You will remember that you told him, on the examination of his head, and gave the same to him, in writing, that he was liable to apoplexy, particularly when recovering from an intemperate indulgence in ardent spirits. A. H. Powell was taken with a fit of apoplexy on Saturday night last at 10 o'clock, and expired about 7 o'clock next morning. The proximate cause was a hearty supper of coffee, meat, and pickled oysters, and as his attendant physician thinks, a predisposition caused by a drinking spell of some four days indulged at Hernando, the week before, but from which he had, to all appearance, recovered three or four days before the attack.

“ Your remarks upon his conformation and predispositions are the subjects of general remark in Holly Springs at this time, and Dr. T., who has settled with us, joins me in asking from you a more explicit statement of the developments and

mode of reasoning by which you arrived at a conclusion which has so suddenly and fearfully been confirmed.

"I remain, etc., JOS. W. CHALMERS."

When a gentleman of Dr. T.'s professional attainments shall desire such information as called for in the preceding letter, it may be reasonably supposed that the mass of the profession has something to learn upon the general subject of apoplexy. If our opinion of his danger had been sustained by his professional friends, it is possible that he would have been still living.

It is to us a matter of no little gratification that Dr. West sustains our convictions upon this subject.* We do not only maintain that passive congestion may take place in the adult brain, and produce apoplexy, but we can select those who are liable to it, when walking the streets of the city: and those who shall investigate the subject of the first part of this work, will soon find themselves competent to the same.

Dr. West has illustrated his lecture on this subject with several cases, all of which took place in very feeble subjects. He would very greatly have increased the value of his illustrations by the addition of their temperaments or those of their parents. How much longer will this subject be neglected as it has been?

Cerebral congestion of this kind is very rarely attended with an extravasation of blood into the substance of the brain.

The symptoms of this malady, in infants, are so obscure to those who are unacquainted with the temperaments and their combinations, and even those who are, can only have a well-grounded suspicion of it, that but little indeed has, consequently, been discovered concerning its therapeutics.

* The letter of Judge Chalmers shows that we taught, as early as 1840, the doctrine of passive congestion or apoplexy of the brain—that this disease could occur in persons of large heads, long small necks, and small chests, as well as in those of a contrary organization. As early as 1840, we had never seen anything like such a doctrine announced, and if such a one had, at that time existed, we believe that a physician as well read as Dr. T. would have known it; and yet, we were so conversant with the subject, at that time, as to be able to select from any crowd those who were peculiarly liable to it, as we have shown by the letter of Judge Chalmers. If it can be shown that any one taught this doctrine, and described the class of persons liable to it, under specified circumstances, at a period even as early as 1840, then we shall abandon all claim to the right of discovery or priority.

CAUSES.—The difficulty with which respiration becomes established, in certain kinds of children, and the changes to be effected in the circulation, may, to some extent, enable us to understand how this apparatus should frequently become injected with blood to any degree, varying from the normal to the truly apoplectic condition. Among these difficulties, it may be remarked, that any cause which can impede the passage of the blood either into the right side of the heart, or from the right to the left side through the lungs, will produce it. Thus far the cause is mechanical, and of the same character must be considered those instances of cerebral congestion which result from pressure upon the jugular veins by a hypertrophoid thymus gland and enlarged tuberculated bronchial glands. But it sometimes occurs in feeble children without any assignable cause, and also in adults, having more or less the encephalic constitution, from slight causes, and sometimes, as in children, without any assignable cause.

Although the shape of the head does not indicate, necessarily, the existence of any particular form of disease, yet it does indicate a liability to a certain range of morbid action, and therefore it always justifies a negative inference. When the cerebellum is very small and the hemispheres are, relatively, very large, we may feel sure that the acting form of disease is not active congestion of the brain, lungs, or any other part; and then, by a reference to the existing symptoms, the particular form may be arrived at.

We may set down the remote cause of congestion to be, most generally, an inherent non-viable organic condition, and that any of the usual sources of irritation may bring it into action.

DIAGNOSIS.—In this form of disease, the neck, chest, and, of course, the cerebellum, are all *small*, while, relatively, the cerebrum is large and expanded at the level of the parietal ridge; and, instead of a flushed face, as in the previous species, it is livid, and all the symptoms indicate exceeding debility.

PROGNOSIS.—Always unfavorable.

TREATMENT.—The indications to be fulfilled in passive congestion, are 1st. To divert the blood from the brain, which may be effected by purgatives, stimulants, and counter-irritation

to the spine and inferior extremities; 2d. To overcome the debility produced by the impression made upon the nervous system by the congested condition of the brain, as well as to increase the action of the heart, and which may be attempted by the administration of Quinine, Myricin, Xanthoxylin, and Hydrastin, in combination, as mentioned in the previous cerebral affections.

GENUS II.—CHRONIC HYDROCEPHALUS—

Dropsy of the Brain.

We have seen several crania of hydrocephalic subjects, and in every instance we have found the external surface marked with inflammatory indications. We have one of a Creek Indian boy, six years of age, which measures twenty four inches in circumference, and seventeen over the top of the head from one meatus to the other. The frontal suture is not only closed, but obliterated; the other sutures are all complete—one squamous suture is entirely obliterated, and every portion of the surface indicates that the pericranium was in an inflamed condition.

We have also the skull of a very intemperate Chickasaw Indian—it is remarkably thin, and so rounded at every angle, and so elevated in the hemispheres, that the original or Indian form of it is lost. Every suture is obliterated, except a portion of the right squamus; and every part of the surface bears the impress of pericranial inflammation. In such cases, there can be no doubt that serous accumulations existed in the brain, and such crania beautifully illustrate the physiological powers of the system to adapt the cranium to the changing condition of its contents.

In those cases of hydrocephalus, in which the cranial bones continue separated, we suppose the absence of pericranial inflammation—with this inflammation the activity of the ossific process is truly remarkable. But, as to the Indian just mentioned, we have not been able to decide whether the result of his intemperance was cerebral hypertrophy or hydrocephalus—he was killed in the midst of his dissipated habits. The cranium is very thin.

We are disposed to regard this case as one of hypertrophy of the brain, a frequent disease among those tribes who have

long had access to ardent spirits, and in all the crania of the kind we have seen, inflammation of the periosteum was an attendant.

With a cabinet of five hundred crania, with some historical information of almost every specimen, it will be confessed that we have advantages which are rarely possessed by others, perhaps by no other individual in any country, we will be excused from digressing a little to drop such information as may, even remotely, elucidate our subject.

The cerebral dropsy, as it increases, produces various modifications in the form of the cranium—it is perhaps never symmetrical. The basis cranii continues to preserve its normal length and breadth, at least without much variation or departure. The posterior lobes are developed upward and backward, the anterior, forward and upward, so as to rise perpendicularly above, or even projecting over, the face; the middle lobes increase outward and upward, while, in some instances, the hemispheres seem to spread laterally, giving the head a projecting aspect in every direction except upward—hence the top of the head appears broad and flat.

In other instances, the hemispheres are carried upward, giving to the whole hemispherical portion of the head a beautifully-turned and normal aspect. But, in consequence of the child carrying its head more in one direction than in any other, or in resting more in one position than in any other, it is never equably balanced—one portion of one hemisphere appears more developed than the corresponding portion of the other.

While the head is being thus developed with much more than normal rapidity, the facial bones are enlarged, usually, with even less than is common to health; hence, the contrast between the size of the face and head becomes so truly remarkable, as never to fail to excite the sympathy of the spectator.

This variety of dropsy sometimes commences before the conclusion of intra-uterine life, and has so far progressed in some instances that the destruction of the fetus became essential to the preservation of the mother in parturition. Under the circumstance of a less accumulation of serum, the fetus is delivered unhurt; in other instances, this accumulation does

not commence until after birth, and then it may be procrastinated for a few weeks or even a few months.

During the days of Dr. Gall, for the purpose of refuting his doctrines, it was gravely maintained that instances of hydrocephalus had been discovered in which the entire brain had been dissolved, and yet, the mental functions had been normally manifested to the close of life.

Dr. Spurzheim, however, demonstrated the fallacy of this objection, by showing that in such cases as exhibited such an appearance, the brain was absolutely existing in all its integrity, but expanded into a membrane, of the extent of the internal parietis of the cranium. In the beginning of the disease, the fluid is contained in the cerebral ventricles, but they are, by the progress of the disease, lost in that general cavity which is formed by the extension of the brain into a sheet or membrane.

In such a display of the disease, it becomes obvious that all the superficial fissures and all the convolutions must become lost in the process of cerebral expansion.

We have thus conveyed an idea of the cerebral condition in a large majority of cases; in the exceptions the brain has not been unfolded, but is situated in the bottom of the cranial cavity, while the fluid is above it and in contact with the dura mater. It is not known that any essential difference exists in the disease, as manifested in these two dispositions of the brain. The first variety is known as *internal hydrocephalus*, and the second, as *external hydrocephalus*. Although the lateral ventricles present the greatest changes and are the most constant receptacles of the fluid, yet none of them are exempt from the invasion. The transparency and polish of their lining membrane become lost while their thickness and toughness are increased, showing that they have been inflamed.

The symptoms of cerebral disturbance, in the advanced state of the disease, differ very greatly in different cases. Sometimes there is but little disturbance further than uneasiness and restlessness, with an occasional increase of temperature of the head; in others, convulsions occur very often, and from very slight causes. In some instances, the patient lives to mature age and upward, with a respectable strength and soundness of the mental faculties; but, in other cases, blind-

ness, deafness, paralysis, fatuity, and idiocy may all supervene and continue for a period longer or shorter before death.

It seems reasonable to suppose that these results are produced by pressure upon the brain, and if so, then there must exist a pathological difference between the two forms of disease. In that class of cases which is exempt from these terrible symptoms, the cranial sutures must be open, or else the constitutional power of maintaining a constant adaptation between the cranium and its contents, has become lost. In those cases of serous or dropsical accumulations in the brain from intemperance in the use of ardent spirits, the normal relation between the cranium and its contents is thoroughly maintained, and in these cases there existed an extraordinary activity in the process of ossific absorption and deposition—apparently an inflammatory condition of the pericranium. The same facts we have noticed to attend the cranium in cases of hypertrophy of the brain, and also in two cases of chronic hydrocephalus, in which all the bones were united and all the faculties were normally manifested.

In another hydrocephalic cranium, with which idiocy or fatuity was connected, the volume of the head was contracted in the direction of each of the sutures, and upon it the marks existed, also, of a preternatural activity of the pericranium. If we should venture a conclusion from what we have observed, it would be this: that where the sutures are unclosed, and where the patient is restless and troubled frequently with an increase of temperature of the scalp, the mental faculties will maintain more or less their normal condition.

Some instances have been observed in which the disease ceased to progress or become suspended, but the dropsy continued; that is, the fluid is not absorbed, the health becomes reasonably good, and the faculties continue fit for all the ends of society and business. In cases of hypertrophy of the brain, we know that the abnormal growth becomes absorbed, and that the internal table of the skull leaves the external and maintains its adaptation to the decreasing volume within. Now, why should this process never take place in hydrocephalus?

While it is unfortunately true, that almost every case of this disease proves fatal, yet it is equally true that all do not die

of the disease. All such patients possess a feeble constitution, and are, consequently, unable to contend with other forms of diseases when assailed; the consequence is, that many die of a disease which has no connection with the cerebral affection.

Upon the treatment of this form, much has been taught, but very little has been effected. In the spring of 1835, Mr. P., a member of the New Orleans bar, invited us to see his little son, some six or seven years of age, afflicted with chronic hydrocephalus. We did not measure his head, but suppose it to have been about two feet in circumference, and rather flat or spread out on the top. In the succeeding January, we met the father again and inquired after the condition of his son, when he informed us that during the preceding fall he had an attack of yellow fever, which had had the effect to entirely arrest the disease—that he appeared to be in good health, and to have a prospect of doing well.

In 1845, we met with a black child about a year old, which had chronic hydrocephalus, and as much health and strength as could be considered compatible with the existence of the disease. We desired of the owner, a gentleman of extensive information, the privilege of trying upon the child an experiment, which, as he had no expectation of its recovery, he readily granted.

Under the hint we derived from the case of the boy in New Orleans, we prescribed the Sul. Quinine, in such portions and with such frequency as to maintain a pretty high arterial action. We continued this course some two or three weeks, or until we were admonished to cease by the fretfulness, feverishness, and loss of appetite of the child. Up to the time of our leaving the State, a period of four or five months, there had been no dropsical increase of the head—its mother and mistress regarded the disease as arrested. We have learned nothing of the case since; but, if it be true that the disease was arrested, it would not be safe to conclude that the arrest was effected by Quinine, yet the result suggests the propriety of a further trial, and we have had no opportunity since of making one.

CAUSES.—This disease appears to be one of infancy, almost entirely, and one that appears under a considerable variety of

circumstances; it is sometimes congenital; sometimes from poverty or meagerness of the food or nourishment; sometimes from a sanguineous congestion of the brain; at other times, from some error in the cerebral circulation.

"In the majority of cases, however," says Dr. West, "the disease is not a mere passive dropsy, but is the consequence of a slow kind of inflammation of the arachnoid, especially of that lining the ventricles, which may have existed during fetal life, or not have attacked the child until after its birth."

Dr. Wood says, that it is possible that the same condition of the blood that induces other dropsies may induce this. Suppose we admit it, and what do we gain? What caused that condition of the blood? We are disposed to attribute it, in most cases, to a direct want of organic vital force. This view has been sustained by our observation, but it has not been very extensive.

DIAGNOSIS.—A highly encephalic constitution has been mistaken for hydrocephalus, and normal depressions of the cranium have been mistaken for mechanical depressions—no diagnostic description can help such observers. It is said that it may possibly be confounded with hypertrophy of the brain, to which we refer for further information.

PROGNOSIS.—When hydrocephalus results from organic defect in the vital forces, its prognosis is decidedly unfavorable, and this condition can always be determined by the developments of the head, particularly the base. If the malady has followed scarlatina or some other febrile affection, more hope may be indulged—but still, the fact of its presence indicates a constitutional infirmity, which forbids strong expectations of recovery.

TREATMENT.—The indications of treatment in this affection, are, 1st. To arouse the action of the absorbent system, by a judicious administration of hydragogues, diuretics, and sudorifics; 2d. To give tone to the nervous system, by Quinine, or Quinine and Prussiate of Iron, with bathing of the surface followed by stimulating liniments; and, 3d. To remove the morbid conditions of the various tissues which give rise to the effusion of serum, and for which we have found the following preparation to be decidedly the best:

Concentrated Syrup of Stillingia, f. 3j.

Iodide of Potassa, ʒss; mix.

Of this, twenty drops, three or four times a day, in a tablespoonful of water, may be given to a child five years old, or in proportion to age.

The diet should be nutritious and not stimulating, and all sources of mental irritation, or gastric derangement, carefully guarded against.

Compression of the head has been recommended in this form of hydrocephalus, but, from our own experience, we cannot say anything in its favor.

GENUS III.—CEREBRAL HYPERTROPHY—

Enlargement of the Brain.

This disease we have not witnessed among children, but among our Indian crania we have a number of remarkable illustrations of its existence and recovery, through which we hope to explain some things with reference to its character.

In treating of this disease, we shall extract from Dr. Watson's Practice all that is pertinent to our purpose. In speaking of the first case he saw of this affection in a female, he says:

"She had been in the hospital scarcely a week, when she had a violent fit of epilepsy; and when she was somewhat recovered, she told us, for the first time, that she was subject to such attacks. The convulsions recurred on the same day, and she became insensible, and remained during the whole of the next day, and until the evening of the day after, when she died. During this period of insensibility, she had many convulsive fits; the pupils were dilated, the pulse one hundred, small and feeble.

"When the surface of the brain was exposed, by the removal of the skull-cap, and of the dura mater, it was observed that the convolutions were remarkably flattened, so that the little furrows between them were nearly effaced; and the surface of the arachnoid membrane was perfectly dry. These are not very unusual, though they are unnatural, appearances. The ventricles were even smaller than natural, and contained scarcely any moisture. The skull-cap was afterward examined,

and the bone was found to be uncommonly thick, dense, and heavy; and its inner surface, without being rough, was very irregular."

We must here pause to notice one fact contained in the preceding extract; the skull was found to be "uncommonly thick." It may be stated as a law, to which there are no exceptions, that no part of the cranium will ever become thick so long as it is under the influence of pressure. In the temples, the brain presses against the bone on the inside, and by the temporal muscle on the outside, and the cranium, at this part, is always thin, when compared with parts that are differently circumstanced. The supra-orbital plates are thin; they are pressed upon by the anterior lobes on one side, and by the globe of the eye and its muscles on the other. The base of the occipital is in the same condition.

With regard to other portions of the cranium, twenty years of observation, under the most favorable circumstances, enable us to assert, without the most remote fear of successful contradiction, that so long as even normal pressure, such as is furnished by a healthy activity of the brain, at the indicated point, the skull will continue thin, and that just as soon as that part of the brain shall, to any extent, cease to act, it will become atrophied or smaller—just as will an unexercised muscle—and that to the same extent will the skull increase in thickness; and we further assert, that this law continues the same under abnormal as well as normal circumstances. The remembrance of this law will serve us important purposes in all of our examinations of cerebral conditions.

According to this law, there was no pressure upon the internal surface of the skull alluded to in the above extract, at the time of the bony deposit. The cranial hypertrophy may only have commenced when she became insensible, as the brain may then have ceased to act.

To illustrate and confirm the truth of this opinion, we will give the history of one which bears directly upon the point before us:

A Choctaw Indian, in Vicksburg, Miss., some years since, in a drinking scrape, was struck upon the side of the head and felled to the ground. Eight days afterward, he was found

in the woods, a mile or two from the city, in a comatose and expiring condition. We have his skull; it was extensively fractured—extending from the base of the left sphenoidal wing obliquely upward and backward, crossing the parietal ridge, and terminating within an inch of the sagittal suture. The edges of the fracture, at about its middle, are separated about the sixteenth of an inch, at which part the original thickness of the skull is clearly discoverable, and the bony matter deposited upon the inner surface, after the infliction of the injury, is nearly equivalent to the original skull.

In this case, coma succeeded to the injury, and a suspension of the cerebral action was the immediate result, and to this succeeded cerebral absorption, which was attended with cranial hypertrophy. However we may explain the phenomena, the fact is, that the thickness and weight of the skull were nearly doubled in eight days. When absorption of the brain commences, no matter from what cause, a plenum is soon produced, and the internal table of the cranium adapts itself to the decreasing volume of the brain.

Now, in the case of the woman before us, there was, no doubt, pressure on the brain, and that it occasioned the insensibility, the absorption of the brain or some of its fluids, and the thickening of the skull; and this pressure may have been produced by congestion, a circumstance which the doctor overlooked.

But where is the proof that this was a case of hypertrophy of the brain? He has not made a statement in proof of it, and the symptoms do not demand the admission of it, and hence we would as soon believe that he was mistaken as to take his word for it.

He proceeds: "Laennec, also, in Corriesart's Journal, states, that upon opening the bodies of persons whom he had thought affected with hydrocephalus, he had been surprised at finding a very small quantity of fluid in the ventricles, while the convolutions on the surface of the brain were strongly flattened; proving that the cerebral mass had undergone strong compression, which could only have arisen from its preternatural volume and undue nutrition."

We shall find good reason for not being surprised at this, without the admission of hypertrophy, before we conclude.

“Beside the characters we have mentioned, the hypertrophied and compressed brain is firmer and tougher than natural; it contains but little blood; and sections of it seem to be unusually dry and pale.

“In several of the cases of hypertrophy recorded by authors, the patients had suffered epileptic fits, or rather paroxysms of convulsion; and in some the convulsions terminated in paralysis. Andral states, that the intellectual faculties have been observed, in some instances, to become dull and obtuse. Many of the patients were subject to severe headaches. All these symptoms are common to various cerebral complaints. The diagnosis of this rare disorder can be no better than conjectural, and its treatment we have still to seek.”

“Andral remarks, what is very true, that hypertrophy of the brain, i. e., an undue and disproportionate development of that organ, may, and does, happen without giving rise to any morbid phenomena at all. But, in such cases, the *brain-case* is equally enlarged in capacity; so that no pressure upon the cerebral mass results from its own preternatural growth. It is only when the brain increases faster than the bony sphere which contains it, that the hypertrophy becomes a disease. In my patient, there was, also, in one sense, a hypertrophy of the skull; the bone was considerably thicker, and more compact and heavy, than is usual; but the capacity of the cavity had not undergone a proportional augmentation; nay, it might, for anything I know, be diminished in consequence of the increased thickness of the bone; the case may have been one of concentric hypertrophy of the bone, without any fault of the brain itself; but what makes this the less probable is, that in other cases, the skull has been found of the ordinary thickness and density, but too small for its contents.”

We may possibly fail to shed any light upon the special character of the disease under consideration, but we feel confident that we can illuminate some of the darkest spots connected with cerebral physiology, and therefore remove some of the heaviest clouds that beshadow cerebral pathology. The preceding paragraph is replete with error and doubt—we do not make this remark with a fault-finding spirit, because no one can be expected to know more than his advantages would or could dictate—and, upon the physiology of the skull

and its relation to the brain, we have found the truth only in our cabinet of crania, which was obtained from various races, tribes, and clans, and in divulging its developments we only liquidate, in some measure, the many obligations we are under to the profession.

What proof has Andral that hypertrophy exists where there are no morbid phenomena? By what rule does he judge of it? Is it not true that there is a physiological harmony in every system in a state of health? Does not a lesion of this harmony, however insignificant, constitute a pathological state? Was it not in the laws of this harmony that Cuvier was enabled to determine the species of an animal by a fragment of its skeleton? He admits a perfect harmony between the skull and the brain, and yet, because the brain is large, it is a case of hypertrophy!

We have shown that the lymphatic and encephalic temperaments have large heads, and we have shown that the progeny of sanguine bilious-lymphatic parents have also large heads; but these facts belong to whole classes, and therefore they are normal, however disproportionate they may appear to Andral or other persons. We venture to assert, that we have examined more heads than Andral ever did, and yet we have seen no such cases of cerebral hypertrophy.

Dr. Watson does not seem to be certain that a hypertrophy of the skull, by diminishing its cavity, might not have produced the suffering and the fatality in the case of the woman which he reports—that the brain may not have been at fault. If the profession at large have as much to learn upon this subject as Dr. Watson—and so far as we have learned, they have—they are certainly unfit to judge of cerebral disease.

We shall now state a circumstance, and assert it to be unqualifiedly a fact, viz: The skull is subordinate to the brain—it holds the same relation to the brain that the bark of a tree does to its ligneous matter. If the brain wants room, the skull provides it and becomes thinner—if the brain becomes smaller, the cavity of the cranium becomes smaller and the skull thicker. This law holds good both in health and disease.

The doctor states, that it is only when the brain increases with more rapidity than the cranial cavity that mischief

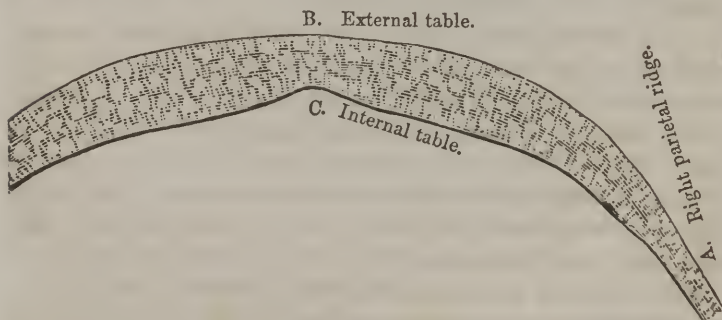
ensues. We deny the whole of this proposition, and repeat, that when the brain wants room the physiological forces produce it. He speaks on the subject as though the skull was an unyielding and lifeless box, and not under the control of the vital forces.

We would first correct the language of Andral, and then explain the difficulty of Watson. When the head is disproportionately developed, without congestion or inflammation, it is normal; and when attended by either of these phenomena, it is abnormal or diseased. With reference to Dr. Watson's difficulty, we say, that the diseased phenomena which attend the last variety of hypertrophy, are occasioned by the turgescence and inflammation consequent upon the disease and the cranial absorption and replacement. Whenever coincident inflammatory action is set up between the cerebral meninges and the pericardium, a deposition of cerebral or other matter is effected on one side, and bony absorption and replacement take place on the other; consequently, as one process increases the magnitude of the contained part, the containing part maintains a precise adaptation to it. Thus, in chronic hydrocephalus, the cavity of the cranium enlarges in proportion to the fluid accumulation.

And, further, there is no proof that undue pressure is ever made upon the brain in this form of disease; and the only conclusive proof of it would be the discovery of a hypertrophied skull, upon post mortem examination, and this, we believe, has not been done; because, just as soon as pressure should be made by the skull, upon the principle of the bandage, an absorption of the brain or fluid would commence, and with this would commence a hypertrophy of the skull.

We have the hemispherical portion of the cranium of a man who died in a lunatic asylum, and who, for some time previous to his death, had been in a state of almost complete fatuity. A brain in a condition so inactive, would necessarily decrease very much in a comparatively short time; and, if our doctrine be true, that the external table of the skull, in an atrophy of the brain, remains stationary, and the internal one maintains a close adaptation to the brain, it would follow that this skull should be unusually thick; and so it is—generally equal to three-eighths of an inch in thickness and very heavy.

We have two crania which show very conclusively that the subjects had had hypertrophy of the hemispheres of the brain and recovered from it. One was a female Hitchetee Indian, of whose history we know nothing, except that she died of the small-pox; the other was a Chickasaw Indian. Upon obtaining his skull, we became exceedingly anxious to obtain so much of his history as might explain the hypertrophied condition of the whole superior portion of it. We obtained the assistance of a white man who had lived several years in the neighborhood of this subject to assist us. Those Indians who knew him, represented him as "moping about," unfit for any pursuit, and living at the expense of his relatives and friends—and that this diseased condition continued some three years when he recovered, and in six or seven years more he died of cholera. All parts of the cranium indicated the normal thickness, except at the superior portions of the hemispheres, where the space between the tables were equal to three-eighths of an inch. The external surface, over this hypertrophied portion, bore evident marks of pericranial inflammation. The following cut represents a transverse section of it, just anterior of the coronal suture:



To account for this peculiarity of the cranium, we must conclude, that as he recovered, the hypertrophied portion of the brain was absorbed, and as the absorbing process went on, the internal table of the skull left the external and adapted itself to the decreasing volume within. The female skull is marked in precisely a similar manner. That the brain had been hypertrophoid, the external figure of the skull left no doubt. It is said, by writers, to be difficult to form a diagnosis

between this disease and chronic hydrocephalus, but this we think to be a mistake, at least, in many instances.

In the latter disease, as the head enlarges, all the parts of the cranium change their distances from the fixed points—such as the meatus auditorius externus; the parietal ridges become more elevated; but this is not the case in hypertrophy of the brain—the enlargement is located, usually, between the two parietal ridges, and rises in a manner which no phrenologist would mistake for a normal development.

Normal atrophy of the brain, or such as is produced by a neglect or inactivity of the atrophied part, presents no sign external to the cranium, but the internal table leaves the external precisely as it does in cases of recovered hypertrophy.

Atrophy of the brain, more or less general, is quite common among plantation negroes, resulting from an absence of mental excitement, and, of course, of cerebral activity. Having but few cares or responsibilities, there is nothing connected with their condition to rouse and maintain cerebral activity. All ethnologists, we believe, assign to the negro a thick skull; but this is an error; free negroes, as a class, have as thin crania as free whites of the same grade of mental activity.

In civil society, because of a division of labor, partial atrophy, or atrophy of some portion of the brain, exists more or less in every individual, but, in savage life, where the pursuits of one individual are common to the tribe, the skull presents a uniform thickness.

As to normal development of the brain, in adult life, or such as is produced by mental activity and toil, we have no indication, except the thickness of the cranium, or measurements of the head made at different periods. Some facts of this latter kind which exist are truly remarkable.

We have dwelt upon the various conditions of the cranium, in several cerebral affections, at considerable length, because our investigations, in this wise, and our advantages have been very extensive, and because the full advantage of post mortem examinations of cerebral affections cannot be had without a correct idea of cerebro-cranial physiology; and, lastly, because no one can pathologically understand the disease under consideration, without the information we have detailed.

"It is of some importance for you to be aware that the brain, and its case, may be extravagantly developed without there being any disease, or any symptom of disease. M. Scantetlen gives an instance of this which he observed in a child five years old. Its head was as large as that of a well-grown adult person."

Such language as this, with reference to the head, is not only faulty, but calculated to propagate and perpetuate error in the popular mind. Let it be remembered then, that the cerebellum alone, and not the cerebrum, is developed in relation to the body. A large man may have the little cerebrum of an idiot, and a little man may have the large cerebrum of a Napoleon. In brief then, the cerebrum is always developed, not in harmony with the body, but in relation to the mental functions.

"The skull was from a line and a half to two lines in thickness."

A skull of this thickness, in a young person, has never as yet been known to contain a sound brain, or rather a brain that has always been sound. No amount of human testimony could affect our opinion on this subject. Human testimony must never be brought to bear against natural law.

"The dura mater adhered firmly to the bone," [Does this show that there had never been disease?] "and the cerebral mass exactly filled up the cranial cavity. The superior and posterior part of the brain was developed beyond measure, so that to reach the ventricles it was necessary to make an incision nearly three inches in depth. There was nothing unusual to be remarked in any of the cerebral functions of this child; it was just like other children of the same age in respect to intellect. It died of inflammation of the bowels."

The thickness of the skull, in this case, is to us a demonstration that the hypertrophied brain was in progress of absorption at the time of its death, and probably had been for some time; and the firm adhesion of the dura mater to the skull, shows that inflammation had existed. But, of all the evidences that can be had of the present or previous disease of the brain, the external surface of the skull invariably presents the most indubitable. No adequate idea of these indications can be conveyed by description, but when

once recognized, they will never be forgotten. And what appears singular to us, is, that no writer, so far as we have seen, has noticed these cranial evidences of disease.

"The majority of cases of hypertrophy of the brain that have come under my notice, in London," says Dr. West, "have occurred in infants about six or eight months of age. Their history has usually been, that, without any definite illness, they had lost their appetite, and grown by degrees dull and apathetic, though restless and uneasy. Notwithstanding the general apathy, this restlessness is often very considerable, though it does not show itself in cries so much as in a state of general uneasiness, and in frequent startings from sleep. Short gleams of cheerfulness occur when the children are awake, but these are usually very transient. The head seems too heavy to be borne, and even when its size is not much greater than natural, it hangs backward, or to one side, as if the muscles were too weak to support it. If placed in its cot, a child thus affected bores with its occiput in its pillow, while its head is almost constantly in a state of profuse perspiration. Convulsions sometimes occur without any evident cause, but threatenings of their attack are much more frequent than their actual occurrence, the child awakening suddenly with a start and a peculiar cry, like that of spasmodic croup, the surface turning livid, and the respiration becoming difficult for a few moments, and the symptoms then subsiding of their own accord. Such attacks may issue in general convulsions, which may terminate fatally; but infants thus affected do not by any means invariably die of the cerebral disorder, but being weakly, they are often cut off by the first malady that attacks them.

"If life be prolonged, it becomes more and more evident that the process of nutrition is imperfectly performed; the child loses flesh, and looks out of health, and an enlargement of the wrists and ankles shows the connection between this disease and rickets—a connection which becomes more evident in the second and third years of the child's life. When the child survives infancy, or when, as occasionally happens, the symptoms of hypertrophy of the brain do not come on until dentition has been in a great measure accomplished, convulsions are of very rare occurrence. Complaints of headache,

however, are frequent and severe ; and, though drowsy in the daytime, the child generally rests ill at night, and often awakes crying and alarmed. Beside these symptoms, too, the child has occasional attacks of feverishness, with great increase of the headache, and giddiness, which last for a few hours or a day, and then subside of their own accord, while it grows by degrees more and more dull and listless, and its mental powers become obviously impaired.

“ You must not infer that hypertrophy of the brain has existed in every instance in which the organ may appear to be large, and its convolutions somewhat flattened, although the ventricles are free from fluid. The weight and apparent size of the brain are much influenced by the quantity of blood contained within it, and it may appear too large for the skull, simply because its vessels are over full. In true hypertrophy, on the contrary, the brain is generally pale and anæmic, unless death should chance to have taken place as the result of an attack of cerebral congestion. Neither, indeed, is the process one of mere increased growth of the organ, but the nutritive process is modified in character as well as increased in activity. The gray matter of the brain is but little involved in it, and, with the exception of its color, being somewhat paler than natural, it shows scarcely any alteration. The white matter, on the contrary, is both paler and firmer than in a state of health ; and Professor Rokitsansky states, as the result of many microscopic examinations, that its augmented bulk is not produced either by the development of new nervous fibrils, or by the enlargement of those already existing, but by an increase in the intermediate granular matter. These changes, too, do not affect indifferently all parts of the brain, but are confined to the hemispheres, implicating neither the base of the organ nor the cerebellum.*

“ The history of the patient would afford some help toward determining whether the disease be hydrocephalus or hypertrophy, for the symptoms of the former generally come on earlier, and soon grow much more serious than those of hypertrophy of the brain, and the cerebral disturbance is throughout much more marked in cases of the former than in those of the

* This remark is in harmony with an opinion we have given, and with the cut that illustrates it.

latter kind. The form and size of the head, too, present peculiarities by which you may often be enabled to distinguish between the two conditions. Both forms of disease are attended by enlargement of the head, and in both the ossification of the skull is very tardy,* but the head does not attain so large a size in hypertrophy of the brain as in chronic hydrocephalus, neither are the fontanelles and sutures so widely open."

Our author, Dr. West, now gives some descriptive views, upon which we shall offer a few comments, and therefore this call of the reader's attention.

"The skull, likewise, presents some peculiarities in form, which are so remarkable as to have attracted the attention of several observers, though I must own that I do not thoroughly understand how they are produced. The head not merely shows no tendency to assume the rounded form characteristic of chronic hydrocephalus, but its enlargement is first apparent at the occiput, and the bulging of the hindhead continues throughout especially striking. The forehead may, in the course of time, become prominent and overhanging, but the eye remains deep sunk in the socket, for no change takes place in the direction of the orbiter plates, such as is produced by the pressure of fluid within the brain, and which gives to the eye that unnatural prominence, and that peculiar downward direction, which are so striking in cases of hydrocephalus. In hydrocephalus, the anterior fontanelle is tense and prominent, owing to the pressure of the fluid within, but when the brain is hypertrophied, there is no prominence, but an actual depression in this situation. I have more than once observed this condition, in a very remarkable degree, the depression not being limited to the anterior fontanelle, but being observable at all the sutures; and you may notice something of the kind in this cast."

We have never seen this peculiar form of head in either the white or red race of the American population, but we have frequently seen it in the black. Persons having such a head, are said to be double-headed. As often as we have seen this

* We have, in our cabinet, the most irrefutable evidence that cranial ossification is exceedingly active in chronic hydrocephalus.

form of head, we have never known it to be attended by any morbid symptom; and, although the occipital and frontal regions appear, in some cases, very much developed, yet the great depression across the head, involving the coronal suture, in such cases, has been so great, that we have considered the quantity as normal, but forced fore and aft, by the depression. We have not comprehended the physiological cause of this depression, but finding it unattended by any symptom of disease, we have concluded, that whatever the cause might be, it acted in harmony with cerebro-cranial sympathy.

“When hypertrophy of the brain occurs in adults, the symptoms that arise are, in a great measure, due to the compression which the organ undergoes from its bony case being too small to contain it. These symptoms are, of course, obscure, while, even if the nature of the affection cannot be recognized, its cure must be hopeless.”

We very much dislike this mechanical mode of reasoning about vital processes. Every mill-boy knows, that if an unyielding saddle be placed on a horse's back, in a short time the back is moved away from the saddle. Every physician knows, that if an unyielding bandage be placed so tightly on a well finger as to make pressure, the finger is speedily absorbed, and that the process produces no pain, except at the time reaction is taking place. Suppose then, that the skull was to make pressure upon the brain, how long would it last? Only one or two hours, and then would commence an atrophy of the brain and a hypertrophy of the skull.

While we repudiate the idea of cranial pressure upon the brain, we admit that there is pressure *in* it. The cranium, during life, is always ready to accommodate the brain with space or room when it is demanded, either in health or disease. The brain, under mental action and industry, enlarges, much more sometimes than the thickness of the skull—why, in these cases, does the brain not suffer because of the unyielding character of the skull?

Dr. West, furthermore, thinks this disease would be hopeless in an adult; but in this, we think, he is mistaken, inasmuch as we have the crania of two adults who did, spontaneously, recover from it.

Beside the various symptoms we have named, we may add,

profuse perspiration of the head, which is "effectually checked," says Dr. West, "by a thin linen cap which may be removed once or twice during the night." As we approve of the practice of Dr. West, in this disease, we cannot do better than to extract it:

"The remedies, under the continued use of which I have seen the most good result, are the extract of bark, from which you might pass to the preparations of iron—such as Vinum Ferri, or that very elegant syrup of the Ferro-citrate of Quinine. I have not made much trial of the Iodide of Potassium, since, in all the cases that I have seen, some more decided tonic appeared necessary. I have, however, given the syrup of the Iodide of Iron sometimes with advantage, and, in cases where the tendency to rickets was well marked, I have observed a most decided improvement follow the use of Cod-liver Oil, in doses of a drachm twice a day, for a child three years old. I may just mention, that, notwithstanding its nauseous taste, this medicine is usually readily taken by children, some of whom even become fond of it.

"With reference to diet, it will probably be desirable, if the child be not weaned, to obtain for it a healthy wet nurse, while after weaning, a diet of milk, with an egg once or twice daily, will often agree better than any other food. In cases of this kind, and, indeed, in all where the digestive powers are feeble, a preponderance of farinaceous food is not desirable, while the child may with safety be allowed a little veal-broth or beef-tea daily, or even a little meat if it have cut some of its molar teeth."

GENUS IV.—HYDROCEPHALOID DISEASE.

Debility of the Brain.

This disease was first described by Dr. Marshall Hall, and he named it as above expressed. It bears considerable similitude to that condition of the brain which follows excessive venesection, hemorrhage, or purging—such as extremely painful headache and other symptoms of encephalitis. He divides it into two stages; the first, he calls that of irritability, and the second, that of torpor. He says:

"In the former, there appears to be a feeble attempt at reaction; in the latter, the powers appear to be more prostrate.

These two stages resemble, in many of their symptoms, the first and second stages of hydrocephalus, respectively.

“In the first stage, the infant becomes irritable, restless, and feverish; the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on being touched, or from any sudden noise; there are sighing or moaning during sleep, and screaming; the bowels are flatulent and loose, and the evacuations are mucous and disordered.

“If, through an erroneous notion as to the nature of this affection, nourishment and cordials be not given, or if the diarrhea continue, either spontaneously or from the administration of medicine, the exhaustion which ensues is apt to lead to a very different train of symptoms. The countenance becomes pale, and the cheeks cool or cold; the eye-lids are half closed; the eyes are unfixed, and unattracted by any object placed before them, the pupil unmoved on the approach of light; the breathing, from being quick, becomes irregular and affected by sighs; the voice becomes husky, and there is sometimes a husky, teasing cough; and eventually, if the strength of the little patient continues to decline, there is a crepitus or rattling in the breathing; the evacuations are usually green; the feet are apt to be cold.”

Any circumstance that can undermine and break down the vital forces of the system, may produce this affection, more especially if, previously, the encephalon has suffered from any variety of disease; a circumstance of this kind acts as a predisposing cause. Premature weaning, more especially if followed by such diet as may so derange the nutritive function as to produce marasmus, or some special disease for the removal of which exhausting remedies were pushed too far, may occasion those symptoms which constitute this disease.

When such symptoms as we have described shall be present, it may be impossible to determine from them alone whether the complaint be acute hydrocephalus or the hydrocephaloid disease. In such an event, we should seek the family diathesis of the patient, and the history of its various forms of disease; in this wise we may become able to determine whether we are called upon to treat a case of threatened encephalic exhaustion, or exaltation. Which ever way the

mistake might be made, it would be equally fatal to the patient. If the family of the patient be clear of a scrofulous diathesis, if cerebral forms of disease have not been common to the family, and more especially to the patient; if, furthermore, the patient has had bad health since being weaned, or has been weakened by venesection, hemorrhage, or diarrhea, then we may pretty safely conclude that the patient is suffering from hydrocephaloid disease.

It is possible to mistake the consequences of an over treatment of cerebral congestion for a continuance of the disease, instead of exhaustion. In cases of congestion of the brain, if the patient be an infant, we would find the anterior fontanelles tense and full, instead of being depressed, as they certainly would be in case of exhaustion. Diarrhea and symptoms of cerebral disturbance are very apt to run together, hence it is proper to guard against mistaking such as are really consequent upon a diseased condition of the bowels, from such as might indicate cerebral congestion or the hydrocephaloid affection. As it would be proper to treat the diarrhea, a proper vigilance over the case will soon determine the character of the cerebral symptoms.

In the treatment of infantile forms of disease we should always have before us the possibility of inducing the hydrocephaloid disease by heroic treatment, and by the history of the patient's condition before the arrival of the physician, the difficulty of diagnosis, from the symptoms in the abstract, may scarcely have to be encountered.

TREATMENT.—The most useful treatment in this disease, is the administration of Iron and Quinine, generous and nourishing diet, and all means calculated to increase the quantity and quality of the blood, and to invigorate the nervous system. Or, if it be preferred, we may use the following as a good tonic:

℞ Phos. Iron, gr. x,
 Sul. Quinine, gr. x,
 Hydrastin, gr. v.

Divide into fifteen (or twenty powders, according to the age of the child), and give one every three hours.

ORDER III.

NERVOUS FORMS OF CEREBRAL DISEASE.

GENUS I.—EPILEPSY.

This form of disease, when idiopathic, is, beyond all question, cerebral; but, when symptomatic, it may frequently result from spinal irritation. A paroxysm or convulsion may occur, having all the features of epilepsy, and not be epileptic, but when it shall frequently recur at irregular intervals, and for months or years, and without any evident cause, then the name epilepsy is given to it. It is a disease of all ages, but that which immediately precedes puberty, seems to be most liable to it.

The paroxysms are marked by a loss of sensation and consciousness, with convulsive motions of the muscles. Most generally the fit attacks suddenly or without the least premonition; at other times, it is preceded by pain in the epigastrium, or vertigo, or stupor; sometimes a sensation like a cold vapor is experienced, which, arising in some part of the body, travels toward the head, and upon reaching it the patient falls to the floor.

The most usual duration of a fit, is from five to twenty-five minutes, but sometimes it is protracted for hours. In all cases, there is a sudden falling, loss of consciousness, distortion of the face and eyes; complexion of the face, in the white race, red, purple, or violet; foaming at the mouth: convulsions of the limbs, grinding of the teeth, by which the tongue and cheeks are frequently badly injured; difficult respiration, and occasionally involuntary discharges of urine and fæces.

When the fit has passed off, the patient has not the least recollection of having had it, but complains of headache, looks stupid and wearied.

CAUSES AND DIAGNOSIS.—Dr. Marshall Hall is of the opinion that epileptic seizures are produced by a compression made upon the jugular veins by the platysma and other cervical muscles. He states, as evidence in support of this opinion, that the paroxysm consists in a fixed condition of the head and eyes, dilated pupil, and deep flush. We have shown, in the first part of this work, that idiopathic epilepsy, at least, is

always associated with a full development of the lateral portions of the cerebellum, particularly of the organ of muscular motion.

It will be remembered, too, that we have shown that apoplexy, when resulting from active congestion of the brain, is connected with the same condition of the cerebellum; and Dr. Hall contends that there is no difference between epilepsy and apoplexy, in their milder forms—that the first degree of both of them consists in trachealismus—a spasmodic action exhibited in efforts upon the venous circulation of the face and brain.

We have also shown that idiopathic rheumatism is associated with a high endowment of the organ of muscular motion and of the medulla oblongata; hence, when the blood becomes highly charged with urea, through a fault of the kidneys, rheumatism may result, and epilepsy is said sometimes to be produced in the same way; it would seem then, that between an epileptic and a rheumatic constitution, there is some affinity.

As a loss of consciousness is the most important symptom in epilepsy, and as such a loss cannot be effected by any condition of the spinal cord, Dr. Todd concludes that epilepsy must be a disease of the cerebrum, and after a consideration of the function of various parts of the encephalon, he concludes that the gray substance is the primary and proper seat of epilepsy, because he considers it to be the seat of consciousness. If he include the whole surface of the cerebrum in the function of consciousness, to what portions of the brain will he refer the fifty other functions which the mind is known to manifest? If this whole surface act as a single instrument, how does it happen that a loss of a portion of it does not impair its function? It is our opinion that phrenology is now too well established to allow of such a pretension.

We are of the opinion that phrenological inference and vivisections both authorize the conclusion that the source of consciousness is situated in the base of the brain, and possibly in the mesocephale; and Dr. Todd is of opinion that this portion of the brain may be secondarily affected. But if it be the seat of consciousness, then it must be primarily affected. But as to how it is affected, unless it be by congestive pressure,

we know not, and mere speculation on the subject can be of no avail.

If epilepsy ever occurs in those who have a small thorax and neck, it must be similar to the passive variety of apoplexy, of which we have given an admirable illustration. If it ever do occur in such subjects, then Dr. Hall's views are still more confirmed, and the distinction we have pointed out between the two classes of subjects, must be attended with important practical results.

Dr. Todd gives it as his opinion that epilepsy consists in an abnormal nutrition, which manifests itself in an unnatural development of force at particular times; and Dr. Hall believes that epilepsy and apoplexy are the same during their first stage, and it is admitted that the latter is both active and passive.

Now, we desire to know how it is possible to reconcile Dr. Todd's development of nervous force with both of these conditions. Though we have never seen a case of anæmic or passive epilepsy; yet, we cannot doubt that it may occur, if the explanation of Dr. Hall is at all reliable.

The known causes of epilepsy are various, and so are, no doubt, the unknown. In some families, it is hereditary, and in many instances the predisposition is such as to make it depend upon the exciting cause as to whether it shall break out in the form of rheumatic mania or epilepsy. The apparent health of the patient seems to have but little to do in the production of the malady—attacking almost indiscriminately the feeble and the strong. It is frequently occasioned by a fall or blow on the head; also by a fright or terror, and, lastly, by the presence of worms in the alimentary canal.

PROGNOSIS.—As to ultimate recovery, it is unfavorable without it is attended to at an early period—it does not much endanger life, but it does worse—leads to imbecility. Under such a prognosis, convulsions, in young children, should receive every possible attention, in order to prevent the formation of an epileptic habit in the system. A mischievous reliance is too frequently placed upon the changes which puberty brings about in the removal of this affection.

TREATMENT.—It is always essential, in the treatment of this disease, to remove the cause if possible. During the paroxysm

but little can be done; we think that we have sometimes shortened the fit and lessened the subsequent headache and lassitude by dashing cold water over the head, face, and neck. One thing is certain, we have not found it best to indulge the patient in a horizontal position or a sleep after a fit.

It will be well, if practicable, to introduce a piece of soft wood between the teeth at the beginning of the fit to prevent injury to the tongue and the inside of the cheeks. If the fit has been occasioned by indigestible food, the remedy is obvious, and whatever may have been the cause, indigestible and trashy food will provoke an increased frequency of its recurrence. Any cause of mental irritation can increase its frequency, such as disappointments, children's quarrels, parent's scoldings, etc.

Whatever the cause may have been, the treatment must be directed to two general objects, the first to break up and abridge the paroxysm, and the second, to prevent its recurrence.

With reference to the first, it is not generally requisite to attempt anything, as the paroxysm usually passes off in a few minutes; but when the paroxysm continues longer than usual, or becomes much more alarming or apoplectic, it will be judicious to attempt some relief by the application of cold water, in any convenient form, to the head, and hot water, frictions, and rubefacients to the extremities.

Beside these external means, injections may be administered, consisting of the Tincture of Castor, or Asafœtida, with a decoction of Scutellaria. If the case be one of infancy, the warm bath may prove highly beneficial. Should the paroxysm be attended with apnœa, Camphor or ammoniacal liquids may be applied with some good effect to the nares; and in the event of suspended respiration, it will be advisable to direct through the diaphragm an electro-magnetic current.

When the paroxysm is over, in many instances, it is best to rouse the patient to a vertical position, to prevent sleep; while in other instances, a contrary course may be the most advisable—experience must decide this question in all cases.

All our hope of effecting a cure must rest upon our skill and exertions during the intervals we obtain between the paroxysms, and upon our discriminations as to its nature or

true character; for it may be only sympathetic, depending upon disease in some other part; or it may depend upon certain organic relations in the encephalon; and it may depend upon such a diseased condition as to render the recurrence of the paroxysms periodical.

The second variety is the only one that is considered to be incurable; but even in this, we are not willing to admit the idea of incurability, because organic relations can be changed by proper exercise or training; indeed, we are not willing to admit the incurability of any disease, in the abstract, because disease is not a constituent element of life—we only admit our ignorance when we fail to cure.

Our first duty, without reference to the original character of the disease, is to investigate the present state of health, and if we find it vitiated, then we must regulate and repair it, and while engaged in the discharge of this duty, we may discover, in connection with the history of the case, enough of its nature or special character as to guide us in our subsequent practice.

So far as we have observed, the second variety of this form of disease is associated with an imperfection of the respiratory function, as is indicated by small and contracted nostrils, and the same remark is applicable to apoplexy — exceptions may exist, but we have not seen them. If this view be correct, we cannot, so unqualifiedly as has been recommended, place the patient upon an exclusively vegetable diet. Farinaceous food must increase the difficulty, and so will all highly carbonaceous food—we suggest, therefore, that the diet should consist of succulent vegetables, vegetable and animal albumen, and the fibrinous portions of animals.

Beside generally impaired health, there may be a troublesome source of irritation — during the first dentition — the revolutionary period of infancy, they are many, and at a later period of life, there may be others of equal magnitude, as family discord, and all such subjects as can disturb mental equanimity. So long as obvious causes of irritation exist, it is idle to attempt a cure.

The remarks we have made might be considered to embrace all causes of irritation, but it may be proper to be more specific. In epileptic patients, without any reference to the cause,

there is generally present some variety of derangement in the digestive system—the appetite is precarious—sometimes voracious—sometimes fastidious—craving improper food. Under such variations of the appetite, we may naturally expect gastric acidity, difficult digestion, and imperfect nutrition.

Sometimes helminthic irritations prove to be the whole cause of the disease; at other times, a diseased condition of the spleen, or suppressed menstruation, may be the only cause. When, therefore, we can reach the cause, we have only, in a great measure, to remove it to cure the patient.

When the paroxysms recur periodically, the case should be considered as curable by a perseverance in the use of antispasmodics and antiperiodics; but even their use is contraindicated, until the constitution shall become elevated above a generally morbid or vitiated condition. In the use of the former class of remedies, such should be selected as are calculated to maintain a constant determination to the surface; perhaps Valerian, or Black Snake-root, administered in a syrup of Ginger, would fulfill the indications. To break up the recurrence of the paroxysms, a combination of Quinine, Lep-tandrin, and Hydrastin, will answer every general purpose, where they assume a periodic condition. In cases of anæmia the Prussiate of Iron will be found to be a very valuable adjunct.

Dr. Lusanna reports (Braithwait's Retrospect, part xxv) very favorable results from the use of Atropine; and Dr. Bul-lar (in the same work, part xix) reports considerable success from the use of the Cotyledon Umbilicus. These and other articles may seem to have a specific effect in isolated cases, but as a rule of practice, we should rely upon such a plan of treatment as will best secure general health.

In those cases which result from some peculiar organic condition of the encephalon, a rheumatic development of it, we would, in an especial manner, direct attention to the respiratory function; and we are inclined to the opinion, that that practice which succeeds best in rheumatism will succeed best in this particular form of disease. We found this conclusion upon the similarity of organization.

In addition to the foregoing, we give the following treatment of a writer who has had considerable and

successful experience in the disease. If the cause can be ascertained, as worms, uterine difficulties, etc., treat them accordingly; but in those instances where the causes are obscure, he adopts the following plan:

During the convulsive paroxysms, he gives to an adult a powder composed of Sulph. Morphine, one-third of a grain, and of Quinine, two-thirds of a grain; this dose is repeated every ten or twenty minutes, or as the patient may be made to swallow it—having it mixed in water. When the paroxysm has subsided, the bowels are to be kept regular by the use of Leptandrin, and Podophyllin, given in small doses, and the following pills employed during the intervals:

℞. Ext. Stramonium, gr. j,
Valerianate, or Sul. Quinia, iv,
Hydro-alcoholic ext. of Macrotys, grs. viii; mix,
divide into eight pills, and give one three or four times a day.

A stimulating liniment must be applied to the spine, as the following, which has been much used by ourselves, as well as by other Eclectic physician:

℞. Oil of Stillingia, 3j,
Oil of Cajeput, 3ss,
Oil of Lobelia, 3ij,
Alcohol, 3vj; Mix.

The spine may be bathed twice a day with this, and continued until the patient complains of nausea, or an unpleasant acrid taste in the mouth. The surface of the body must be bathed once or twice a week with an alkaline wash; all acidulous and greasy articles of food must be avoided, and the mind kept perfectly free from excitement of any kind. In acidity of the stomach, he prefers the use of the Carbonate of Ammonia in this disease to any other alkali.

In pursuing the above treatment, it should be recollected to proportion the doses according to the ages of the children. In young infants, the Antispasmodic Tincture is preferred to the Morphine and Quinine.

GENUS II.—CHOREA.

Chorea Sancti-Viti—St. Vitus' Dance.

This affection is characterized by irregular and involuntary motions of one or more limbs, and of the face and trunk. It

occurs generally before puberty, and more frequently before the age of ten years than afterward, and is generally associated with torpor of the system, and particularly of the digestive organs. It usually exists for a long time, and without danger to life, and with a complete exemption from it during sleep.

We are apprehensive that there prevails a very general want of correct information on the character of this affection, and it is possible that we may leave it as much beclouded as we found it; nevertheless, the suggestions we may add may result in some good, by directing observation to a new channel of investigation.

We have found no evidence to satisfy us that this affection depends upon a diseased condition of any organ, but rather upon a feeble or debilitated one. It should be remembered that extreme muscular feebleness and tardiness, or comparative torpor of the digestive functions, characterize one of the human temperaments; and this one, furthermore, is associated with a feeble endowment of the lateral, or motor and sensitive, portions of the cerebellum. In such persons, the power of volition is feeble, but still more feeble is the motor portion of the cerebellum, hence the latter has not the power to execute the mandates of the former.

In infancy, the cerebrum merely vegetates, and all the vital power is expended upon the lower and most common functions, but at five years of age, and even younger in some cases, the cerebrum manifests all or nearly all of its functions, the vital forces have not strengthened in proportion to the expenditure upon both the lower and higher faculties. So long as the patient did but little more than vegetate, the function of animal motion was normally manifested; but when that large number of powers which place us in relation to all that surrounds us, is brought into action, we are forced to the inquiry, where is the power to come from to effect a normal action of all the instruments common to humanity? These reflections may be foreign to any utility, in relation to the subject before us; nevertheless, the fitness of the coincidences, as we have seen them, induce us to believe that the suggestions we have thrown out deserve some attention.

Prof. Wood says, that "The regular motions are after

greatly increased by any emotion; and it has been noticed that the patient is generally worse when conscious that others are observing."

This manifestation, to a certain extent, may be observed every day about us, in society, among those who have much caution, little destructiveness, and feeble vital forces. The man who cannot refrain from betraying perturbation and a tremulous motion of his knees and hands, is just so far a subject of chorea.

"It appears that," continues Dr. Wood, "if the will cannot accurately regulate the movements of the muscles, it has the power of calling them into abnormal action; for the spasmodic contractions are much more frequent when the patient endeavors to execute any movement with peculiar precision, than when the will is quiescent."

We think that Dr. Wood is mistaken in supposing the patient capable of calling the muscles into abnormal action—he calls them into action, but has not the power to render their action normal. When a man, who is perturbed, attempts to write, or to do anything else that requires precision, he is certain to fail.

The doctor continues: "By the exertion of a strong determination, the patient can also often control the muscles in some degree, so as to keep them quiet for a time, though, if he allows or encourages them to move, it is impossible to prevent them from moving in their own way."

What observer has not witnessed all this in men of feeble vital force, under the excitement of responsibility? Drunkards, and those laboring under an ague chill, present the same phenomena.

The preceding remarks of Professor Wood, go very far to strengthen the suggestions we have made; and it is possible that this feeble condition of the motor system of nerves may be increased or rendered more deranged by an imperfect discharge of the digestive functions.

Professor Wood again states, that "An unsteady, excitable state of the nervous system, constitutes a predisposition to chorea. Such a state is apt to attend a feeble condition of the general health."

If this observation of the doctor is reliable, and we think

that it is, then we are sustained in referring chorea to a very feeble endowment of the vital forces—an extreme degree of that feebleness which is exhibited every day in mental perturbation and nervousness.

CAUSES.—Remotely, the cause may be, in many instances, that division of labor which has assigned to many sedentary habits, and in very many instances it has resulted, beyond doubt, in intermarriages with blood-relations and incompatible constitutions; if the statistics could be had, we would not be surprised to find that the latter is the most frightful source. We knew one family in which four or five of the children were thus afflicted, and the parents were of the bilious encephalic constitution. Prof. Wood says, that, "In many instances, the disease has come on in many persons previously healthy and robust." This language is usually applied to those who are obese, and we have shown (page 20) that an accumulation of fat is as clearly a manifestation of organic relations, as an accumulation of tuberculous matter—they are both produced by an imperfection in the sources of pulmonary action.

Until we made these discoveries, we could not conceive how it was that obese men sometimes died of phthisis pulmonalis, but now, it clearly appears that any cause calculated to arrest the fat-depositing process, may cause an eruption to appear on the skin, diarrhea, a deposition of tuberculous matter, and therefore it is possible, that by some other modification of action, chorea may result.

TREATMENT.—Professor Wood teaches, that "Constipation should be promptly corrected by purgative medicines." This precept, standing unqualified as it does, we hold to be exceedingly dangerous. We have seen that this malady, if such it should be regarded, is founded in debility, and in all such constitutions the normal condition of the bowels is one of much torpidity, and so are all the excretions and secretions, and, consequently, to force them into a more active condition than suits the constitution, is to increase the affliction of the patient.

It should be the first business of the physician to ascertain the normal habit of the bowels, and the second is to maintain them in that condition. Purgatives, in this case, as in others, are indicated when evidence is manifested that alvine torpidity

is occasioning irritation — is aggravating the malady. We would suggest, that to the maintenance of all the organic functions, there should be added such exercise as will most promote the further development of the thoracic viscera, and to have this effect, it must be enjoyed.

In chorea, the bowels should be kept regular by small doses of Leptandrin and Podophyllin, so combined as to produce one alvine discharge daily; in connection with which, either the Compound Pills of Macrotys, the Compound Pills of Valerian, or the Compound Tincture of Cramp Bark, of the Eclectic Dispensatory, may be used. The surface should be bathed often with an alkaline wash, and considerable friction used in drying. Electro-magnetism may be used, daily, with advantage.

If the disease is complicated with rheumatism, or the patient is of a strumous diathesis, the employment of the Compound Syrup of Stillingia and Iodate of Potassium, heretofore referred to, will be found serviceable.

In cases of obstinate constipation, some have recommended the use of Extract of Belladonna, one-eighth of a grain, and the Alcoholic Extract of Nux Vomica, one-twentieth of a grain, in form of pill, three of which are to be given daily to an adult, and in proportion to children over six years of age; below this age, he thinks, it has an injurious influence upon the brain, and should not be administered at all.

The diet should be nutritious and of easy digestion, avoiding tea, coffee, all stimulants, acids, and greasy food.

GENUS III.—PARALYSIS—

Palsy.

This form of disease, when complete, consists in a loss of sensation and of the power of motion. In some instances, there is a loss of sensation, without the power of motion being affected—the affection is then called *anæsthesia*; and when the condition is reversed, that is, the power of motion is lost, while that of sensation is retained, it is called *acinesia*. When a particular part of the system, as an arm, the muscles of an eye, or the face, have lost the power of motion and sensation, the affection is called *local* palsy; when the same condition happens to one lateral half of the body, it is called

hemiplegia; and when to the lower half of the body, including the inferior extremities, it is then called *paraplegia*; when both powers are lost in any given part, it is denominated *complete* paralysis; and when either or both powers are in part retained, it is called *partial* paralysis.

As we have shown that the functions of motion and sensation are performed by two distinct and independent organs, it can be readily understood how it is that either may be lost or palsied without the other; and further, the same discovery renders intelligible all of the preceding definitions.

That loss of motion and sensation, which attends coma, apoplexy, syncope, epilepsy, etc., is not included in the above definitions; nevertheless, paralysis may succeed to either of them, as a sequent. We have seen all the voluntary muscles, except those of the neck and face, paralyzed, and yet life continued twenty-four hours. Our observations upon one case of this kind, induce us to believe that life could not continue a minute after a complete paralysis of all the voluntary muscles should happen.

When palsy takes place, in adult life, it comes most frequently as a precursor to a final dissolution, but such a consequence is not to be apprehended when it seizes upon infancy and childhood; and yet it may prove quite incurable, or entirely so. In infancy, it sometimes appears to depend upon some original defect in the organization, because it so operated before birth, that the affected part is, at birth, less developed than the unaffected; but, in such cases, it is more apt to appear as acinesia or anæsthesia, than as complete palsy.

But the disease, either partial or complete, is much more frequently occasioned subsequent to birth, by some variety of assault upon the brain or spinal cord. When it is the result of spinal irritation, it may be attended by nausea and vomiting, but more frequently by flatulence and diarrhea—and by such manifestations of the body as show a disposition to avoid resting the weight of the body upon the spine, and which, upon the appearance of the disease, becomes impossible. The gastric and alvine symptoms above named, have been mistaken for cholera infantum, and hence the propriety of looking out for the spinal manifestation, above noted, in all cases of bowel derangement.

In many instances, the assault appears very trivial—such, possibly, as a day or two's manifestation of unusual dullness and heaviness of the head, which appeared, perhaps, too unimportant to command medical attention, or possibly by a single convulsion, or perhaps by some dental irritation, which, so far as ascertainable, produced no cerebral disturbance.

In three-fourths of the cases of paralysis, that occur during the period of dentition, there will be found no local signs of difficult dentition, and yet there can scarcely be a doubt that it was occasioned by the irritations incidental to this period. This is only another illustration that physicians have been in the habit of referring too much to the local circumstance of dentition, and not enough to that general condition that prevails during this period, especially with those children who have but feebly endowed vital forces. Paralysis may succeed to spinal irritation, occasioned by a constipated condition of the bowels. It is reported also to have been produced by the child's sitting upon a cold stone, and therefore it is not improbable to suppose that it may be occasioned by wet and cold clothing.

It is worthy of remark, that it matters but little as to what form of disease that disturbed the general health, previous to the manifestation of paralysis, nor how soon it may subside or disappear, yet the paralysis will so far continue as to produce much inconvenience as to the comfort of the patient, and the appearance and usefulness of the affected part.

Whatever may be the cause, remedies addressed to the general health sometimes very readily give relief, but at other times, it persists for weeks, months, years, and even for life, in defiance of all the profession can do.

The most important point connected with this subject, is diagnosis—to distinguish it from indications of impending mischief—such as organic disease of the brain. Sometimes the history of the disease will be sufficient to determine its character. If the paralysis has suddenly seized upon both extremities, on the same side, unattended by any cerebral symptoms, we may conclude that it indicates no serious mischief; but if the paralysis has secretly and slowly made its invasion upon some given part, we may find it very difficult to come to a conclusion.

Connected with a disease of the brain, there is usually involuntary tremor or nervous twitchings, with a contraction of the fingers and toes. In case of convulsions, the paralysis that succeeds may render the cases still more obscure. But we may state, as a general fact, that when the paralysis succeeds to a single fit of convulsions, there is no local mischief in the encephalon; but when such a lesion does exist, there will be a succession of convulsive assaults before paralysis will become manifest, and the part that will manifest it, will, during the convulsions, be probably the only or the most convulsed part.

In cases of incomplete paralysis of an inferior extremity, the sensibility of the limb is sometimes exalted; and but for this circumstance, there could be no liability of confounding hip-joint disease with incomplete paralysis—but the almost, if not invariably, fixed pain in the knee, in hip-joint cases, will distinguish it from paralysis. In the latter, that extreme pain can never arise, which is occasioned in the former when the head of the femur is made to strike against the acetabulum, which is apt to follow a slight blow upon the heel.

TREATMENT.—Upon this subject, Dr. Wood says: “It may not be amiss to state, in general terms, that the remedies in cases of active congestion, active hemorrhage, or inflammation, are bleeding, general and local, proportioned to the energies of the system, purging, refrigerants, low diet, rest, and if these fail, blisters and a mercurial impression.”

Dr. West says, that “Purgatives and tonics are the remedies which I have most frequently employed; for the bowels are usually constipated, and the child often debilitated.”

The above extracts embrace the doctrine, on this subject, of all the writers whom we have consulted, and as we hold it to be entirely erroneous, it is proper that we should make it the subject of some criticism.

In the first place, we do not believe that two per centum of the cases of infantile congestion and hemorrhage are active in their character—but exclusively passive; and this opinion is sustained by the closing remark of Dr. West, “the child is often debilitated.” We believe, that if he had considered obese children as “debilitated,” he would have found no exception—his language would have been, the child is always

debilitated. The case of the child which we extracted from him, under the head of Phthisis Pulmonalis, is a thorough illustration of this point. We conclude then, that in all cases of palsy, which originate in functional derangement, the child is feeble—feeble because of those organic conditions which we have exposed, that constitute almost a *sine qua non* to the production of infantile palsy in general.

Now, what is the practice? The child is feeble, therefore bleed it and purge it, and if these fail to kill it in due time, then try blisters and mercury. We are aware that this course generally succeeds in effecting its—death. If there can be adopted a course of practice, with a feeble child, better calculated to produce paralysis, than the preceding, we cannot imagine its character.

The affection generally consists in debility, and this debility is certainly increased by both bleeding and purging. Irritation in the gums, bowels, etc., have also their origin in debility, and purgatives are certain to produce irritation in some part of the system. To speak truly of this practice, we must say that it is not enlightened by one ray of common sense.

Whatever may be the obstruction that has occasioned paralysis, the system is making an effort to remove it, and for the purpose all of its energy is concentrated upon the one object, constipation must result, for the time being—it is then, a favorable indication; and, if in its stead, diarrhea should ensue, it might justly be regarded as a fatal indication.

So long as constipation gives no evidence of producing irritation, we should not only let it alone, but co-operate with the system in removing that disease or obstruction which has occasioned the paralytic symptom; and, therefore, the equalization of the circulation and the support of the child's energies, should constitute our first duty.

When we have indications that the fecal contents of the bowels are becoming a source of irritation, they should be removed by injections, because the difficulty is always in the large intestines, and thus we avoid the irritation consequent upon the action of cathartics upon the alimentary canal.

If the paralysis has been occasioned by inflammation, or rather by that disease for the removal of which inflammation was set up, cerebral congestion, or any similar affection of the

spine, the initiatory treatment will be found under these respective heads. If it have originated in some obstruction or irritation incidental to the dental period, it will be centripetal in its character, and therefore may be removed by revulsives. When the malady is connate, no plan of treatment, it is generally thought, can avail anything. This may be true, but as an abstract conclusion, we cannot assent to it. Connate organic conditions can be changed—we have proof of this in the history of every man who has lived an active life, and as disease depends upon organic conditions and relations, no case should be declared incurable before the mechanical or the chemical laws have declared it to be impossible for the vital forces to regain an ascendancy. When it shall be discovered that the palsy has resulted from a tumor pressing upon a nervous trunk, the remedy must be obvious.

In this disease, among children, the stimulating liniment, mentioned under Epilepsy, should be applied to the spine, and tonics given internally, with gentle stimulants, such as Myricin, Xanthoxylin, etc., and a nutritious and easily-digested diet.

GENUS IV.—NIGHT TERRORS—

Frightful Dreams.

That set of manifestations which we designate night terrors, are, perhaps, never occasioned by any permanent disease of the brain, but rather through the instrumentality of intestinal derangements; and when from these, they are sometimes too slight to admit of detection. Children, who have apparently an every-day good health, go to bed, sleep soundly an hour or so, and then (we cannot say awake, because entire consciousness is rarely, if ever, present with them at the moment), start suddenly and in great terror, giving a piercing cry or scream. When attention is given to it, the child is found sitting up in bed and betraying the utmost alarm—crying for his nurse or the one who most attends to his wants. When spoken to, it will answer, and yet appear unconscious of the presence of any one, or of what it is doing, but still screams under the influence of its frightened imagination; at length, and gradually, it becomes both conscious and awake.

In most instances, as soon as aroused to consciousness, the

child is quiet, and again returns to sleep as though nothing had happened; but in other instances, and occasionally at other times with the same individual, it seems to have a deep trouble, weeps passionately, but finally sobs itself to rest.

In some cases, it is said, that when the fit passes off, a quantity of limpid fluid is voided, but we have not seen it. These attacks very rarely occur more than once upon the same night. As the affection obeys no law of periodicity, it cannot be foretold when the terrors will be likely to return—they may return the next night, and they may not—they may occur almost every night for a year, or only a few times. The paroxysms are all alike—and are founded upon the idea of some impending danger.

Parents at first are very apt to be alarmed, fearing that some serious malady is threatened; but after a time they come to regard these terrors as nothing more than the child's frightful dreams. But this indifference may result to the injury of the child, because by indulging such an irritation, it might result in some very serious affection, such as convulsions, and their frequent recurrence may produce death—and yet a post mortem examination might detect, in neither the brain nor spinal marrow, the slightest indication of disease.

It is not best to force such children to bed in the dark, and if they be alone—no one to cling to as being capable of protecting them, the light should not be extinguished before they fall to sleep. So long as the child manifests no intolerance of light, complains of no headache, the pulse regular, head cool, and no drowsiness, there will be no occasion to apprehend the approach of hydrocephalus, more especially if the abdomen be full and hard—indicating the presence, perhaps, of constipation, which very frequently attends, more or less, these night terrors. The irritation attendant upon both the first and second dentition, may prove an exciting cause in their production.

TREATMENT.—This affection, perhaps, is founded entirely upon gastric or intestinal irritation. Children, who are permitted to eat anything, particularly of a trashy character, and those who are passing through either the first or second dentition, are those who are the most liable to be afflicted in this way—but there is another condition which, so far as our

observation has extended, may be regarded as a *sine qua non* in the premises—it is a very moderate expansibility of the lungs, as indicated by small and contracted nostrils, with an absence of respiratory motions in the chest; this circumstance, particularly, makes it essential that the malady should be attended to.

No other treatment is required, than to confine the patient to simple and nutritious diet, more especially of the azotized variety, and to keep the bowels in a normal condition by the use of mild aperients.

If worms are present in the intestines, remove them by the proper agents: if there should be irritation of the gums from teething, pursue the course herein recommended for such irritation.

In some instances, a pill composed of Hydro-alcoholic Extract of Macrotys, one grain, and Sulphate of Quinia, one-fourth of a grain, may be administered once or twice a day.

If the child is permitted to sleep lying on its back, it will be more liable to these attacks. Late suppers and meats for supper must positively be prohibited.

GENUS V.—TRISMUS NASCENTIUM—

Infantile Tetanus.

This very generally fatal disease has hitherto been but little understood, so little indeed, that we should probably have passed it over in silence, but for having found a very valuable paper on the subject in the "Nashville Journal of Medicine and Surgery," by Professor Watson. He has, in our judgment, handled the disease in all its aspects, knowingly and intelligently. We shall not, in what we shall say, go beyond his paper, nor shall we follow him any farther than he pursues the disease; that is, we shall not meddle with his comments upon the opinions and doctrines of others, further than to remark, that he has handled them with as much ability as he has the subject. In commenting upon the opinions of Dr. Sims, he says:

"This reminds me of Dr. Cullen's acknowledgment: 'I have, in my Nosology, put the trismus, or lock-jaw, as a genus distinct from the tetanus; all this, however, I now judge to be improper, and am of opinion, that all the general terms

denote, and are only applicable to, different degrees of one and the same disease.' Surely trismus, in the infant or adult, is a mere variety of tetanus, and like the other varieties depends upon a pathological condition of some of the cerebro-spinal centers.

"It is a great misfortune that the term trismus nascentium was ever adopted; tetanus nascentium would have been a better, though a less euphonious, one. There was no greater necessity for changing the name of this disease, in the case of infants, than there is to change that of pneumonia, dysentery, or colic, when they attack children."

He thinks it probable that there may exist, in the constitution of some individuals, a sort of tetanic predisposition, and that cold or damp air, indigestion, exposure to solar heat, "foul and badly-ventilated lying-in-hospitals," a want of cleanliness, etc., may serve as predisposing causes.

"*The exciting cause of Tetanus Nascentium.*—A traumatico-tetanic condition of the umbilicus, is, with a very few exceptions, the constant exciting cause of this disease. The analogy between traumatic tetanus, as it occurs in the adult and infant, is both striking and instructive, and well deserves our most particular consideration. In the adult, this disease generally comes on about the eighth or ninth day after the reception of the wound, and in the infant, it attacks so frequently on the ninth day after the cutting of the umbilicus, that it has been termed 'nine-day fits.' That portion of the cord which, after its division is left in connection with the navel, is as liable to degenerate into an exciting cause of tetanus in the infant, as is a common wound in the adult.

"C. M. Billiard's explanation of the separation of the funis is quite satisfactory; he very properly maintains, 'that desiccation of the cord is altogether a physiological phenomenon, belonging to the assemblage of vital phenomena, and entirely dependent on them. That part of the cord attached to the placenta, does not exhibit the phenomenon of desiccation, like the portion remaining with the child, but shrinks and decays like a dead substance, while the abnormal portion is not so affected. Here the desiccation ceases as soon as life is extinct; it either does not proceed in still-born children, or is considerably retarded. In place of dying and separating at the end

of a few days, as is observed during life, the cord undergoes in the dead body a perfect decomposition, differing entirely from its normal desiccation.' He further contends, that 'the umbilical cord may, under favorable circumstances, separate from the navel, just as the stem of a cucurbitaceous fruit is separated,' or by what he terms 'a proper suppuration.' Of eighty-six infants examined by him, nineteen had redness and tumefaction of the umbilicus, without suppuration. The period for the detachment of the cord varies from the second to the seventh day."

He thinks that the liability of infants to irritation, inflammation, and sloughing of that portion of the cord which remains attached to the abdomen, has been greatly overlooked by medical writers. It is his opinion, furthermore, that there exists a variety of causes which may induce a normal and healthy action to degenerate into a morbid one, and that some children are more exposed to all of them than others. The professor lives in a slave country, and has had extensive opportunities for observation, in both the white and slave population, and he states, as a result of such observations, that the slave children are more exposed to all these causes than the white, and hence the disease is much more frequent among them.

These common causes, which apply to the blacks more than to the whites, he says, "are bad dressings of the umbilicus, improper handling of the infant, wet and soiled dressings, which become alternately wet and dry for several days; to which may be added, unsuitable applications to the navel itself after the detachment of the cord, that are more calculated to inflame and irritate the part, and in that way to provoke lock-jaw, than to soothe, heal, and prevent its suppuration."

From the facts presented by the professor, the conclusion is irresistible, that this fatal morbus is more common to the black than to the white population of the south; and here, let it be remembered, there are no paupers, as in the free states of this and other countries. It is furthermore ascertained, that the same difference, as to this disease, exists between the poor and pauper classes, on the one hand, and the affluent, on the other, that obtains between the black and white of this country.

Those conditions of life, as regards personal comforts, which exist with the blacks, exist also with the poor of all countries. Now, what is the condition which is common to the infants of the poor and the slave infants? A want of every personal comfort.

The professor's description of negro infants, as he has frequently seen them, is that which we have witnessed in the wretched families of the free states, viz:

"Their clothes wet around their hips, and often up to their armpits with urine—the umbilical dressings not only wet with urine, but soiled likewise with fæces, freely giving off an offensive and fecal odor, combined at times with a gangrenous fætor, arising from the decomposition—not desiccation—of the cord."

Under such circumstances, it will readily be admitted that the normal physiological desiccation must be interrupted, arrested, or degenerated into a most foul and morbid condition. The professor has presented a large amount of evidence in support of his conclusions—and we think that he has sustained them. He has concluded, that "the infant is no sooner born than it becomes a *traumatias*, a trauma must of necessity be inflicted upon its umbilical cord; a wound on a part which is very prone to pass into a pathological condition, and thereby excite irritation and inflammation of the umbilicus."

Two objections have been urged to the professor's conclusion, which we will name, and append his answer, lest others may conclude that they have not been anticipated.

1. "That the navel may be badly inflamed, and yet not cause tetanus."

2. "That cases of trismus have occurred where there was no inflammation of the umbilicus."

"But for these considerations, many would doubtless have entertained a much greater dread of a morbid state of the umbilicus, and would oftener have employed tetano-prophylactic measures in such cases. Indeed, with no little astonishment have I heard well-informed physicians say, that they did not believe that inflammation of the navel is the exciting cause of trismus, merely because they had seen very badly inflamed ones, without the occurrence of lock-jaw; or, that they had seen cases where the umbilicus had healed over. Verily, my

surprise would be equalled by the assertion, that they did not believe that a wound was the exciting cause of tetanus in the adult, because they had seen very bad ones fail to produce it, or had seen cases occur after the healing over of wounds. Almost every practitioner knows, from personal observation, that an adult may receive a deep, dangerous, and painful wound without incurring lock-jaw as a consequence; also, that a wound may cause the disease after having healed over; then, may not severe inflammation, or extensive ulceration, of a child's navel run its course without causing trismus? and may not the part heal over, and yet, by an occult pathological condition, excite the disease?"

The professor has not treated of the symptoms, varieties, or therapeutics of this disease, which we very much regret; he states that his purpose, mainly, has been "a reliable prophylaxis, by which a disease that cannot be cured, *may be prevented*;" and so admirable and practical are his remarks upon the purpose of preventing the disease that we feel it to be due to young practitioners, to extract them at full length.

"Physicians have generally given up the dressing and management of the funis, too much into the hands of unskillful nurses, lest by a careful attention to such small things, they might compromise their fancied dignity. But every one who is properly impressed with a dread of tetanus from bad management of this part, will rather try to maintain his professional character and dignity by preventing a disease which he knows he cannot cure, however trifling the means may seem, in the estimation of the ignorant, inexperienced, and prejudiced."

"The umbilical cord should be divided as usual about two inches from the abdomen, and well tied with a suitable ligature before its division. After the child has been washed by the nurse, another ligature should be applied lest the first one should become too slack from the contraction of the cord. A hole of a proper size should then be made through a piece of soft old domestic or linen, four inches wide and six inches long, through which the funis should be passed, and afterward carefully wrapped with another soft piece of cloth two inches wide and three or four long. The cord should then be turned up toward the child's breast, and the cloth which was first

applied, should then be folded in on it from above and below, and from side to side. A soft flannel bandage should then be carefully put around the abdomen and pinned with moderate tightness. After this, should the navel-dressings become wet with urine or soiled with fæces, they should be carefully removed and dry ones employed. This should always be done by an experienced and careful nurse, lest the cord should be prematurely detached. On a careful examination, should there be any signs of irritation, inflammation, or ulceration of the navel, the piece of cloth, through which the wrapped funis passes, should be removed, by cutting with a pair of scissors from without into the opening in the middle; this being done, it may be removed without hurtfully disturbing the cord. After this has been done, it will be necessary to apply another piece of cloth like the one just removed, unless the inflammation be considerable; in that case, the part should be gently washed with warm milk-and-water, and a soft emollient poultice applied over the wrapped cord and surrounding surface to the extent of two or three inches. The application, removal, and renewal of this poultice will require great care.

“The chief advantage of wrapping the cord, is that of preserving it from adhering to the cloth through which it passes, and thereby preventing its removal when necessary. All awkward, rough handling of the cord should be avoided, as the navel string may be, in that way, stretched, torn, or prematurely detached. After the funis has separated, the umbilicus should be carefully washed with castile soap-suds, and if there be the least appearance of irritation or inflammation, a soft mush-poultice, somewhat larger than a dollar and about twice as thick, throughout its whole extent—lest the edges become dry—should be neatly spread on a soft piece of cloth, then moistened on its surface with a little lead water and olive oil, and laid with care immediately over the navel, and should be retained in its place by a proper application of the bandage previously employed. This poultice should be removed in six or eight hours and another applied, and so on until all signs of a morbid state of the part entirely disappear. It will sometimes be necessary to continue this course of poulticing for five or six days, to the entire exclusion of all other topical applications. All predisponent, accessory, or accidental causes

should be removed with great care as far as possible; the general health of the child should be closely watched, and internal remedies employed if necessary.

“Soft, emollient poultices, certainly afford even an adult suffering from a wound greater protection than any other means. Who ever saw a patient attacked with traumatic tetanus, who had had all the prophylactic benefits of good poultices, a well-regulated temperature of his room, and appropriate remedies? The soothing action of the poultice seems to prevent a wound from passing into that condition which excites lock-jaw. The terminal extremities of the wounded nerves, or those that have been exposed by ulceration, or irritated by inflammation, are protected by a poultice against that tetano-pathological condition into which they pass sometimes, when not thus guarded, with great facility.

“But, alas! because the inflammation of the navel is trifling, or the ulcer on it small, the physician does not consider either worthy of his attention, when, really, the very elements of death are more actively at work than in many other cases which so readily engage his closest attention and greatest skill. It is probable that a greater amount of human life might be saved by these simple preventives, than most physicians or nurses are aware of; and it is always far more difficult to procure the employment of such prophylactics, than those uncertain remedies which are so zealously administered sometimes for the relief of an incurable malady.

“Nurses should be properly directed to employ these preventive means, especially among our negroes; and every practitioner should constantly urge their adoption on all large plantations and negro quarters. When these means are faithfully employed, negro children escape tetanus to as great an extent as do white children. It should be the resolve of every practitioner never to allow an infant to be attacked with trismus that may be delivered by him, or placed under his care at birth, since, by a patient and careful employment of appropriate prophylactics, it may be prevented. These means, simple and unpretending as they are, require some foresight and tact for their beneficial employment; if the poultice be not well applied, of proper consistence, or becomes dry and hard, it may do more harm than good. Beside, if the child be not

protected against wet and soiled clothing, bad air, variable temperature of its body, bad feeding and nursing, these pre-disponent, accessory, and accidental causes, may cause the morbid umbilicus to pass into a traumatico-tetanic condition in despite of poultices or any other topical applications whatever; so it is highly necessary that all these things—little in themselves, though great in their effects—should be scrupulously regarded by every conscientious practitioner.

“The writer of this treatise, while faithfully discharging his duty to infants in the employment of these prophylactic measures, has often experienced the jeers and taunts of the nurses on such occasions. Every practitioner should, however, perform his duty to his little patient, be it white or black, in protecting it against an attack of a disease which he may prevent but cannot cure, and thereby impress nurses, parents, and even communities, with the great utility of such a course. In that way our prophylactics may be raised above the contempt of the ignorant or those too wise to learn.”

As the Nashville Medical Journal may not be within the reach of our readers generally, the opinions of several writers, on this disease, may be found in Dr. Wood's Practice of Medicine.

So far as a child can manifest the general symptoms of tetanus, they may be expected in this. If the opinions of Dr. Sims are to be credited, it is quite a curable disease; but other extensive practitioners assert that they never knew a case to be cured. This, we suppose, to be about the fact, hence the great value of Professor Watson's prophylactic measures.

When an infant is attacked with trismus nascentium, to the gangrenous umbilicus, apply daily a solution of Sulphate of Zinc, one drachm to an ounce of water, and cover this with a poultice of Slippery-elm, to two drachms of which a solution of the Extract of Hyoscyamus, twenty grains to an ounce of water, must be added, and renew the poultice two or three times a day; the solution of Zinc to be applied until healthy granulations appear. The bowels are to be kept open by the Compound Powder of Rhei, in decoction, or by enemas; cold water must be applied to the head; and bathe the whole spine two or three times a day, with the liniment recommended in

chorea. Internally, administer an infusion of one drachm each of *Ictodes Fœtida*, *Cypripedium Pubescens*, and *Scutellaria Lateriflora*, to six ounces of water, of which a teaspoonful may be given every hour or two.

GENUS VI.—CONVULSIONS—

Infantile Fits.

“These are clonic spasms of the muscles, producing visible motions of the limbs or other parts of the body, and generally attended with unconsciousness. When the contraction is slight, feeble, and of short continuance, so as to occasion a mere catching of the tendons, with very little observable movement of the parts into which the tendons are inserted, the affection is denominated *subsultus tendinum*. It may or may not be accompanied with unconsciousness.”—WOOD.

Convulsions are but rarely independent of some of the forms of disease over which we have passed or are yet to consider; and, therefore, if we had passed the subject by, as an independent one, we should not have been guilty of anything like considerable omission. The importance of treating of it, as a separate subject, consists in bringing under one head its various features.

A convulsive liability of the system is one of increased irritability, and a paroxysm is usually anticipated by more than ordinary restlessness—readily excited into a fretful mood of feeling and a peevish temper. At night, the convulsive approach is frequently indicated by an incapacity to sleep, or if sleep should supervene upon going to bed, it will be disturbed or broken by sudden starts and cries.

The iris is generally very dull and unimpressible by light, or else exceedingly sensitive to it. In the presence of light, the pupil will suddenly contract, and then probably as suddenly dilate—sometimes one pupil will dilate while the other contracts.

Mr. North is of the opinion, that when this unequal sensibility of the iris exists, that the brain is probably seriously involved. Dr. Good says, that when children are strongly liable to convulsions, they lie, when asleep, “with their limbs rigidly extended, the great toes and thumbs being turned inward.”

The face, superior and inferior extremities, and the respiratory muscles, are the most liable to convulsive movements, but no part, endowed with muscular fibers, is exempted. The countenance varies in both color and expression—at one moment, it is flushed, at another, pale—at one time, it is sad, at another, cheerful. These changing feelings affect the respiration, producing deep and lengthened inspirations, which are followed by a short and interrupted respiration. When the respiratory function is thus disturbed, it is thought by some, that a paroxysm is near at hand. In this state of strong liability, the fingers are subjected to sudden and frequent motions.

The face, in some instances, is about the only part that is convulsed—in others, different parts of the body are convulsively seized, but most generally every voluntary muscle and many of the involuntary are spasmodically excited, and attended by a staring of the eyes, protrusion of the tongue, frothing at the mouth, labored breathing, and distortion of the eyes. Frothing at the mouth is but rarely attendant—it is perhaps present only in such cases as will most likely prove fatal, and then, before dissolution, the skin becomes of a purple color, and so continues until the close of life.

The Infantile Constitution in relation to Convulsions and kindred affections.—In Chapter VIII of the preceding Book, we exposed some of the errors that prevail on this subject, and as enlightened views, in relation to disease, constitute the only proper guide in practice, we must be permitted to comment a little on prevailing opinions with reference to infantile convulsions. We shall begin with an extract from Prof. Eberle, “On Children.”

“Both the anatomical and physiological peculiarities of the infantile system, are, indeed, such as to account for the especial aptitude to convulsive maladies during this tender period of life. The mind and body of an infant, not yet inured to the impressions of internal and external causes, possess the most lively susceptibility to the various perturbing and exciting influences to which it is unceasingly subjected.

“All children, however, are not equally disposed to convulsions. Mr. North observes, that ‘the children of parents, who marry at too early or too advanced an age are more

susceptible of convulsions than the progeny of those persons who marry in the prime of life.' I have met with several instances of aptitude to convulsions in families which accord entirely with this observation. That the predisposition to convulsive affections is sometimes hereditary, appears to be highly probable. Boerhaave and Lerry, mention instances which strikingly illustrate this fact. We often meet with families, in which the occurrence of convulsions, is almost a matter of course in all the children as they successfully pass through the process of primary dentition; and, on the other hand, in very many families, blessed with a numerous offspring, such affections never occur, although the ordinary exciting causes, may be conspicuously present. It would appear also, that convulsions are much more common in cities, and particularly in the higher and more luxurious classes of society, than among those who 'are regular in their mode of living, and who enjoy the calm tranquillity of country life.' The fresh and pure air of the country, has an especial tendency to invigorate the infantile system, and to diminish nervous irritability, and thus to render the ordinary causes of convulsions less apt to excite such affections. It is, probably, mainly from the want of pure and wholesome air in hospitals, that convulsive diseases are so much more common in these institutions than elsewhere. The children of mothers, endowed with a very susceptible physical and moral constitution—with a quick and lively imagination, great sensitiveness, and mobility of temper, are in general peculiarly apt to suffer convulsive affections, during the period of dentition. Mauriceau, Leuret, and others, assert, that children who have very large heads are more liable to convulsions, than those who are less liberally furnished in this way. This observation, however, appears to be wholly without any foundation, with regard to children who are healthy. In rickety children, the size of the head is disproportionately large; and from the general symptoms of rachitis, it is evident that the head and spinal marrow are considerably affected; the brain increases rapidly in size, the senses are usually very acute, and convulsions are very frequent attendants of this distressing malady. It not unfrequently happens, when some children of the same

parents are affected with rachitis, that others who are exempted from the disease are at a very early age destroyed by convulsions."

If this long extract contain one clear or one useful idea, we have failed to find it. Two ideas, however, may be inferred from it: first, children have convulsions; and, second, Prof. Eberle does not know why they do; and yet, so far as we have been able to discover, he is about as wise as his collaborators. One reference will show that this remark is correct Prof. Wood says:

"The peculiar state of the nervous system, in infancy and early childhood, may be considered as a predisposing cause. Very impressible from the necessities of the organization at this age, it must of course feel more sensibly than at other periods of life the influence of disturbing causes. But there is also a great difference in children in this respect. In some, the nervous system is peculiarly liable to this mode of derangement, either from inheritance, from powerful impressions, as some suppose, upon the nervous system of the mother during pregnancy, or from inappreciable causes, which often determine, in all the children of certain parents, a predisposition of this kind. Nothing is more common than to see all or most of the children of one family peculiarly subject to convulsions, though the parents may have exhibited no such tendency in their own persons. Children, thus predisposed, show themselves more impressible than others by ordinary causes, start frequently, are usually excitable, if not properly controlled, are apt to be fretful or irascible, and occasionally exhibit great precocity. . . . The anæmic condition strongly predisposes to convulsions."

It will now be perceived, that no difference of opinion exists between these two distinguished writers, and that neither of them has one clear idea on the subject. Both of them set out with the idea that convulsions (see Chapter VIII, Book I) are founded upon the abstract imperfections of infancy, and both whittle entirely away this leading idea, before they conclude, and then close by knowing nothing about the subject. These extracts entirely justify the remarks we made in the chapter and book above cited, and afford us another opportunity to

great of a subject that constitutes the foundation of nearly all the forms of disease which are incidental to infancy, and, indeed, to early and middle-aged manhood.

Divines and speculative philosophers have frequently referred to MAN, as an evidence above all the balance of creation, of the wisdom and design of his Creator; pathologists are constantly, by inference, contending for the contrary. If we are to believe them, Deity bungled more in designing the organization of man, than in all the balance of the organic world; and, as a consequence of this bungling, one-fourth of the human progeny die before the close of the first year, another fourth, before the close of four more years, and another fourth, before the attainment of manhood. Does such a mortality mark any other department of the animal creation? Why does it so happen with man? Prof. Eberle answers, when he states that "both the anatomical and physiological peculiarities of the infantile system, are indeed such as to account for the special aptitude to convulsive maladies during this tender period of life;" and Prof. Wood, with much more brevity, answers: "The peculiar state of the nervous system in infancy and childhood." The inference from these answers must be, that children possess a nervous peculiarity which is incompatible with life, health, and longevity.

Our divines seem to think, and very correctly, that man's unfortunate condition, as concerns morality and religion, has resulted from his countless violations of moral and religious laws; but medical writers seem not to have suspected that his physical condition, as regards disease and premature death, holds any relation to his numberless sins or outrages against his organic laws. No, in this respect, he has not sinned—his premature sufferings and death result from peculiarities incidental to his infancy, in the abstract and necessarily. This is the true and legitimate meaning of our professional writers, and yet none of them seem to believe it—at all events, they do not seem to be satisfied with it; for Prof. Eberle says, that "all children, however, are not equally disposed to convulsions." What a fortunate discovery this is! every child is not doomed to have convulsions, notwithstanding their "anatomical and physiological peculiarities," which produce an "especial aptitude to convulsive maladies," during infancy.

Prof. Wood, too, admits that there is "a great difference in children in this respect." Does this difference depend upon the necessary infantile peculiarities? He informs us again, and Prof. Eberle confirms it, that some children inherit a convulsive disposition. This may be true—but how did the parents come by it? He further states, that some children have this predisposition, whose parents never exhibited anything of the kind. We admit this to be probable, under circumstances. He ought to have informed us whether the children were born in the country that the parents were—a material point this

"Mauricean, Leuret, and others," says Prof. Eberle, "assert that children who have very large heads are more liable to convulsions," than those of a contrary condition; but the professor thinks this observation to be without foundation, and we agree with him, so long as it stands without qualification. The observation should have been thus stated: Children who have a large cerebrum, or mental organization, with a small cerebellum, or animal one, are the most liable to have convulsions—they are, indeed, almost the only ones who have them. In harmony with these remarks, are two which Dr. Wood has incidentally dropped, namely: children thus predisposed "occasionally exhibit great precocity," and, he adds, "the anæmic condition strongly predisposes to convulsions;" but what are the organic features of the anæmic "condition?" No writer has yet informed us—we suggest then, that all those who constitute the third class, page 20, are anæmics—and among them are frequently found extraordinary specimens of precocity.

Dr. Eberle informs us, that Mr. North teaches that the children of parents who are too young and of those who are too old are more liable than the progeny of those who marry in the prime of life. We shall not dispute that the fact may so exist, in many instances, but we shall deny the presumed cause. If the parties did not marry before they were capable of procreating, then they did not marry too young, because it was never intended in the plan of creation that man or any other animal should have a power and not rightly manifest it, unless indeed, that the Author of all things bungled in this matter, as he did in the constitution of children if medical writers are to be believed.

But, as we are much more disposed to attribute human misfortunes to human transgression of wisely-ordained laws, so we are disposed to admit that many persons have married both too young and too old, because they should not have married at all. In the former, there was not a sufficient viability, and in the latter, transgression may have impaired that viability which originally may have been good. We have seen as healthy and viable children from mothers of fourteen and fathers of eighty years of age, as we have ever seen. It will not be denied that this is not sometimes the case, consequently it cannot be contended that youth and age produce, necessarily, unsound children, and a single exception destroys the rule.

We conclude then, that the liability possessed by some children does not depend upon any of the necessary peculiarities of infancy—that the plan of their existence, in the abstract, is as perfect as that of adults, and, *cæteris paribus*, they are as little liable to convulsions.

Remote Causes.—Strictly speaking, we can acknowledge the existence of no predisposing cause—causes produce modifications of organization to a certain extent, or to an extent compatible with life; in these modifications exist liabilities to certain family forms of disease, and upon the exciting cause and present circumstances, depend the particular member of the family which shall be developed.

Upon this department of our subject, Prof. Eberle writes with much propriety and correct discrimination, but when reviewed in detail, or as a whole, he completely contradicts the whole of that doctrine which we have had under review. He shows, in effect, that infantile convulsions do not depend upon inherent peculiarities of the infantile constitution, in the abstract, but are produced by causes acting through the parents to the effect of unbalancing the organization of the progeny. It is true, that he knows nothing of the organic changes which the causes produce—and, without being justly vulnerable to the charge of egotism, we may safely assert, that our first book contains the first revelation that has ever been made on this subject.

He says, that it is the opinion of some writers that infantile convulsions are much more frequent now than formerly,

and the assigned cause, in meaning, is about this: that in modern times too much attention has been bestowed upon the mental functions, and too little upon the animal; and this opinion he very appropriately and forcibly illustrates by a reference to our Indian tribes, among whom infantile convulsions are measurably unknown.

This paragraph embraces pretty much his whole idea of the subject, and though correct as far as he goes, he has not fully embraced the idea—his remarks apply too much to the present training of children, and not enough to the peculiarities of organization that is entailed upon them. Many children die of convulsions before their organization could have been materially affected by training. He seems to have no idea of the vital exhaustion which is effected in parents, by their impassioned pursuits of pleasure or business, by which a large and preternaturally active cerebrum, and an equally preternatural smallness and feebleness of the cerebellum, or vital forces, are entailed upon the progeny. This difference, in very many instances, amounts to an absolutely unviable condition, even for a week, and beyond this, it is graduated to manhood.

Exciting Causes.—These are necessarily varied and numerous—all causes of irritation in the sources of vital action, in early infancy, may produce convulsions in those who are organically liable; and at a later period they may be occasioned by sudden impressions made upon the mental department of the brain, and for the reason, that a turgescence of the cerebrum cannot be produced without the sources of vital action becoming similarly circumstanced. These views enable us to comprehend how it is, that even intermittent fever is sometimes, in children, introduced by convulsions.

The irritations in the animal and mental systems of the brain, which produce convulsions, are not generally engendered in them, but are transmitted to them from other parts. A fright, by acting through the external senses upon the intellect, and through it upon the protective faculties, may result in convulsions; and irritations, produced by worms in the intestines, acting upon the extremities of the spinal nerves, and through the spine transmitted to the sources of vital action frequently produce them.

The period of the first dentition, with anæmic children, is

fruitful in convulsions, because of the many irritations which are generated by the numberless developments in progress during its existence. Dentition is generally regarded as the cause, but this we are satisfied is an error—the vegetative system, in its troubles, selects the parts which are directly involved in the dental process, as organs through which to make known to our consciousness, its true and suffering condition. Further than this, the dental process has no more agency than others of equal importance.

Sanguineous turgescence will produce convulsions as well as nervous irritation, and as the treatment in the two forms is very different, it is proper that neither of them should be mistaken for the other. Under the head of Cerebral Congestion, we have treated of the former, and the other frequently occurs in nervous affections of the pulmonary system. The former is distinguished by sanguineous phenomena, as a flushed and turgid countenance, a contracted, frequent, and tense pulse, dilated pupils, a hot and dry skin, and strong arterial action in the temporal arteries. When the affection is of the latter, or nervous character, the pupils are contracted, the countenance is pale, the skin is cool, at least, it is not heated, and the pulse is small, frequent, quick, feeble, and irregular, and very probably results from worms, or some other cause of alvine irritation, as indigestible food, or gastric irritation from inappropriate food.

Convulsions may, and sometimes are, occasioned by the repulsion of cutaneous forms of disease or other morbid drains of the system. We have shown, in another place, that the exanthemata are sometimes introduced by convulsions, and that they also follow a repulsion of these forms of disease. The milk of the nurse, after violent mental emotions, or excessive fatigue of the body, has been known to produce fatal convulsions of the child. Convulsions may also be produced by mechanical causes, as blows or falls upon the head, and they result rather from the concussion produced, than the local injury inflicted. These concussions have been known to occasion morbid developments of the internal table of the cranium and consequent epilepsy.

PROGNOSIS. — Although convulsive paroxysms not unfrequently prove fatal, yet more is to be apprehended from that

particular cerebral organization which occasions a liability to them. Such children may escape convulsions, but die of cerebral or pulmonary congestion, and they may escape these, and die of phthisis pulmonalis. No matter how circumstanced, such is their inevitable condition, organically, that they have the gauntlet to run, and will finally drop before attaining the meridian of life. Our cities are replete with such living monuments of parental transgression. Ought we to marvel that the progeny of such people should meet with an early grave?

According to the custom, we have digressed, for writers, in treating of prognosis, confine their remarks to the existing invasion; but, with us, a useful idea or admonition is never dropped out of place.

Convulsions, originating in remote irritations, as the helminthic, are, *cæteris paribus*, less dangerous than the proximate, or such as originate in the brain or its spinal prolongation; but the former may produce such a structural lesion of the brain as to prove fatal.

Sudden convulsive seizures, such as happen without premonitions, are to be regarded as more dangerous than those of a contrary character. When the paroxysm is attended by paralysis, or squinting, the existence of severe mental lesions may be suspected; but convulsions, however occasioned, should so far be regarded with apprehensions as to command the most prompt and vigilant attention.

TREATMENT.—Many forms of disease produce infantile convulsions, and hence the first duty of the physician is to ascertain the particular form of which they are a manifestation, and then, to treat the case accordingly.

If they have resulted from cerebral congestion, the treatment will be found under that head.

If they have been caused by the repulsion of some rash or cutaneous eruption, it should be reproduced by such revulsive measures, as emetics, followed by diaphoretics, and warm drinks, with the application of rubefacients to the spine and extremities, occasionally preceded by warm baths. The most suitable emetic for an infant is the Compound Tincture of Lobelia, or the Acetated Tincture of Bloodroot.

If occasioned by indigestible food, or by the indigestion of proper food, the indication will be to empty the stomach by

emetics, followed by a small dose of the Compound Powder of Jalap. Cloths dipped in hot water, should be applied over the stomach and bowels during the convulsions, repeating their application every few minutes.

If alvine obstructions have occasioned them, purgative enemata should be freely administered, and for the purpose of revulsive influence, they should always be of a stimulating character; thus, Castor Oil, Molasses, and warm water, of each one ounce, to which may be added one or two fluid drachms of the Compound Tincture of Lobelia and Capsicum; to be employed for a child six or seven years old.

If worms have occasioned the convulsions, their expulsion becomes the proper remedy.

In cases of strong determination of blood to the brain, it is quite common to bleed, but the physician who will reflect that more or less of anæmia is always present, and more or less constitutes the foundation of the malady, will never resort to such a measure, but will relax the surface, and equalize the circulation, by the same means as recommended above, in cases of recession of cutaneous eruptions.

When dentition is ascertained to be the exciting cause—as the difficult or retarded protrusion of a tooth, we are advised to cut down to the tooth, but to do this with a view of facilitating its exit, is, in our opinion, betraying an ignorance of every physiological principle, but it must be done, however, for the purpose of relieving turgescence.

In such cases, our reliance, mainly, should be placed upon revulsives, such as cool or evaporating lotions to the head, pediluvia as hot as they can be borne, and the hot or very warm alkaline wash;—the warm bath so used and repeated, in the event of much cerebral turgescence, as to keep down all excessive arterial action, will generally succeed in counteracting the spasmodic tendency. Absolutely cold applications to the head are objectionable, first, because they irritate, and second, because they may produce collapse. When even moderately cool or evaporating applications are used, we should give attention to the appearance of the face, so that we may discontinue their use, in the event it should become pale; the pulse at the same time being frequently examined, for,

should it decline or intermit, such revulsives should be discontinued. When there exist decidedly inflammatory symptoms and a strong determination of blood to the brain, we approve of immersing the feet in very warm water, and then to use effusions of moderately cool water upon the head, shoulders, and thorax. In such cases, rubefacients to the ankles, legs, and back will frequently be advisable, but all vesication should be avoided, because it is liable to result in sphacelation in anæmic infants.

In all cases of infantile convulsions, the Compound Tincture of Lobelia and Capsicum will be found one of the best agents for speedily allaying convulsive action; it should be given by pouring it into the corner of the mouth, and repeating the dose every ten or twenty minutes, until the convulsion has ceased. For a child one year old, twenty drops may be administered at a time. As soon as the child can swallow other agents, then pursue the treatment as above directed

CLASS II.

MANIFESTATIONS OF DISEASE IN THE SPINAL APPARATUS.

INTRODUCTION.

WE know that life can be continued for twenty-four hours after the destruction of the spinal cord; therefore, it may be inferred that it is not so indispensable to existence as the basilar portions of the brain; nevertheless, when we contemplate the quadruple character of its functions, no doubt can be entertained as to its permanent importance in the animal economy. It receives from, and transmits influence to the brain; and it receives impressions from and transmits them to all other parts of the system, and thus, as a prompt and faithful telegraph, it maintains unity and harmony of action throughout the entire domain of the animal economy. It acts in conjunction with the ganglionic system, and thus, so far as nervous influence is concerned, it regulates a large majority of the organic functions—exciting alike such as may be demanded by the nutritive, respiratory, digestive, circulatory, secretory, motory, sensory, and procreative functions; any disturbance of its normal condition produces derangement in all of them. The range of its influence is great, and not more great than complicated, and we regret to add, that we know by far too little of its multiplied forms of disease. So true is this, that we shall omit to treat of many of its so-called “diseases”—selecting only two, which are the most strongly marked and destructive.

ORDER I.

INFLAMMATORY FORMS OF SPINAL DISEASE.

The pathological relations of the spinal cord and its membranes, very much resemble those of the brain and its membranes—its several forms of disease partake of the same peculiarities—those of the one frequently extend to the other, and with both there is a similar obscurity in the symptoms. This, indeed, we might expect from its known complexity of function. Through it, mostly, we become conscious of the ill or good health of our animal and automatic systems. It conveys sensitive impressions from most parts of the body to our source of consciousness, and transmits impressions of volition to the muscles of a large portion of the body. Morbid conditions of the cord produce deranged manifestations in all parts of the body below the point of disease.

GENUS I.—SPINAL MENINGITIS—

Inflammation of the Tunics of the Cord.

Under this head, we propose to treat of an inflammatory form of disease of the membranes which invest the spinal marrow. In this case, the inflammatory action may or may not extend to the substance of the cord, and it may or may not involve those of the brain. Of the three investing membranes, it is the fate of the *pia mater* to be the most usual seat of the morbid action.

It appears from medical history, that this variety of disease prevailed in some parts of France, in 1843 and 1844, as an epidemic, and in many instances it proved fatal in twenty-four hours; it did not, however, attack children, so much as those who had passed the age of puberty; and, although the inflammation was very extensive, and the effusion beneath the membranes copious, yet it but seldom happened that the nervous substance of the cord became invaded. Its course was rapid, rarely extending beyond the fourth day; it was attended, in the outset, with severe pain in the abdomen, vomiting, purging, and general collapse, but reaction speedily succeeded, when the pulse became full and frequent; the face acquired a tetanic

expression with a firmly fixed retraction of the head. To these symptoms succeeded convulsions, coma, and death.

With adults, it may not be difficult to ascertain that a diseased condition of the spine exists, because they can communicate their feelings, but such is not the case with young children. When pressure is made upon the spine, and they cry, we cannot be sure that the cry was occasioned by any unusual pain; they totter in walking when well, and therefore we cannot be sure that any spinal affection has produced it.

Mons. Billard informs us, that this affection gives rise to convulsions of the limbs, and occasionally of the face, more especially if it be located near the base of the brain. He further informs us, that in twenty instances of convulsions, out of thirty, he had detected well-marked inflammation of the spine, and in these twenty cases there were six with inflammation of the meninges of the brain and of the spinal cord, so that it is probable that convulsions of infants are almost always the result of an irritation or inflammation of the rachidian meninges. The following case exhibits the development and the progress of the symptoms of meningitis:

“Louis Russal, aged three days, entered the infirmary on the 3d of September. During the preceding night, he had been attacked with convulsions, which continued until morning. His limbs were rigid and violently bent; the muscles of the face were in a continual state of contraction; the pulse was full, strong, and frequent. The convulsions diminished, without ceasing altogether, immediately after the application of leeches. The child was very feeble, and respired with difficulty, and discharged a quantity of frothy saliva from the mouth. On the morning of the 4th, the convulsions returned with increased intensity; the pulse was quickened, the integuments very hot. The feeble condition of the child forbade the application of leeches, and the treatment was confined to the application of cold to the head. The convulsions continued during the whole day; the body remained rigid, and the vertebral column, which the weight of the trunk will cause to bend with the greatest ease in the young infant, remained straight and immovable whenever the child was raised. The cry was very acute, the muscles of the face contracted with the same force as before, and they appeared a little more

drawn to the left side. In the evening, the child sunk, became cold, with a small, intermittent pulse, and died during the night."

"*Post mortem examination*.—General paleness of the integuments, spotted redness of the stomach, a discoloration of the mucous membrane of the small intestines, tumefied and red follicles in the large intestines. A large quantity of effused blood appeared on the surface of the right hemisphere of the brain, and a sanguineous serosity in the lateral ventricles at the base of the cranium. The meninges of the brain were pale, those of the spine very much injected, and on the surface of the tunica arachnoidea appeared a very thick pelticular exudation; this coating was very easily removed, leaving the membrane beneath covered with red points without any alteration of tissue."

"Such," continues Mons. Billard, "are the symptoms and lesions usually presented by spinal meningitis; yet it is possible that there may exist simple irritation, without exhibiting, on opening the body, any apparent inflammatory lesions. It is not unusual to find after convulsions, in children, nothing more, as in adults, than simple injection of the meninges; but ought we to doubt that this is the seat of the disease? and do we not see that there is, in this case, only a difference in degree from the slightest irritation to the highest stage of inflammation, the progress of which generally leads to lesions, which afford incontestable proof of the nature of the disease?"

"The spinal meninges may participate in the inflammation of all the serous membranes. I once found, in a child that died three days after birth, peritonitis, pleuritis, and rachidian meningitis."

This inflammation, although it may be very circumscribed, is frequently attended with the most serious symptoms; and then again, very extensive lesions may be produced without being attended with a single well-marked symptom. Hence it follows, that great difficulty exists in forming a diagnosis. The speedy progress of this malady, its numerous complications, the sudden change it makes from exacerbation to remission, and the uncertainty that attends the nature and duration of all the symptoms, tend to confuse the physician and to render his treatment inefficacious.

TREATMENT.—During the months of April and May, in 1844, a similar epidemic to that of France, prevailed in the southern and central portion of the State of Ohio, at which time a large proportion of the inhabitants of one neighborhood were at first attacked, after which the disease gradually extended itself over various parts of the country. In many cases, the persons attacked died within six hours from the appearance of the first symptoms, and mostly in a comatose condition, a few having death preceded by convulsions; the greater number of those attacked, however, died within thirty-six hours from its commencement, unless relieved at an early period.

The plan of treatment adopted by the physicians at the commencement of the epidemic, was copious venesection, Calomel, and Opium, which, with the bare exception of one solitary individual, invariably resulted in death, so far as our observation extended. The treatment which we adopted, was the application of Granville's lotion the whole length of the spine, until free vesication was produced; Quinine was likewise administered in large doses, in connection with Aqua Ammonia, and Tinctures of Castor and Valerian; and where this failed to produce relaxation of the rigid condition of the muscular system, we employed enemata of Tincture of Asafoetida and Tincture of Lobelia. The above, with applications of warm water to the extremities, strong alkaline baths to the surface generally, and rubefacients to the stomach and abdomen, resulted in the cure of every case thus treated. The observation and experience afforded by this epidemic, clearly proved to our mind, that it did not depend upon inflammatory or excessive vital action. We would observe that this epidemic was confined entirely to adults.

GENUS I.—MYELITIS—

Inflammation of the Spinal Cord.

This affection of the spinal cord occurs much less frequently than spinal meningitis. As nerves of sensation and motion are supplied by the spinal cord to most parts of the body, it may be readily supposed that disturbances in the functions of sensation and motion will become manifested in those parts

which are thus connected with the invaded portion of the cord, and such is found to be the case.

Beside derangement of motion and absolute pain, there is very generally present a sense of numbness, tingling, formication, and coldness in the limbs. These may occur in one-half of the body, or only in a part of one half. The power of the muscles is also affected, and with this an impairment of the voluntary control over them, which may end in complete paralysis.

As the anterior portions of the cord distribute motor nerves, and the posterior, sensitive nerves, so it follows that either motion or sensation may be separately destroyed, depending upon the special seat of the inflammation. A rigidly contracted or a convulsive condition of the muscles may succeed the paralysis. The automatic system of nerves, sympathizing with the animal, is often attended with much derangement of the automatic or vegetative functions, such as constipation of the bowels, retention of the urine, palpitation of the heart, dyspnoea, hiccough, etc.

If the inflammation be located about, or at the origin of, the respiratory nerves, life is soon extinguished—at most in one or two days; but if below that point, as the abdominal organs are not so immediately essential to life, death may not supervene for several days, or the disease may pass into the chronic state, and continue for weeks, and even for months or years.

It is taught, that the occurrence of rigidity or tonic spasms indicates the existence of meningeal inflammation, and that paralysis may be considered to generally denote inflammation of the substance of the cord; but this diagnosis is of but little importance, as the treatment in both, so far as we now know, is, and must be, the same.

A softening of the medulla is the principal anatomical character of this disease, and it may be partial or diffuent, white, or mixed with sanguineous effusion. A partial softening may exist in a part of the cord, with induration of another part; and when this condition obtains, the softening is at the superior extremity and the hardening at the inferior. When these two extremes exist, we may pretty safely infer, that they were produced by disease, but considerable softening sometimes

exists without our being able to infer that it was diseased ; and yet it may, perhaps, be set down as a law, that extreme softening is attended by paralysis of motion or sensation.

Post mortem examinations of this disease, not unfrequently disclose sanguineous congestion of the lungs, effusions of blood in the abdomen, cranium, or spine.

DIAGNOSIS.—It is important that we do not mistake either myelitis or meningitis for rheumatism, and with infants it is difficult to obtain a clear diagnosis. With adults, pressure on the spinous processes will give the most pain when the disease is in the cord, and upon the side of the spine when rheumatism exists. When the disease has so far advanced as to produce tonic spasms, or paralysis, then we need have no further doubt.

CAUSES.—The most certain causes of this form of disease are strainings of the back and falls, which sometimes happen with children in the hands of awkward nurses, and we may add, atmospheric vicissitudes. It may also result from other diseases of the spine, and likewise from inflammation of the corresponding tissue of the brain.

PROGNOSIS.—This form of disease must always be regarded as dangerous, though by no means necessarily fatal. The words epidemic myelitis and death, appear to mean the same thing—to be assailed is to be destroyed. When the common form passes into well-established paralysis, death may be anticipated with much certainty.

TREATMENT.—“In the acute affection,” Dr. Wood recommends, “bleeding as freely and as frequently as the pulse and general strength will permit ; copious and repeated local depletion by cups and leeches along the spine, purging with calomel in the beginning, and subsequently with saline cathartics,” etc. When a patient can bear all this and the disease too, the constitution may be said to be proof against both doctors and disease.

Fever and inflammation are essentially the same—accumulations of vital force or action to remove obstructions to secretion and absorption. The indications then, must be to relax the system, establish an equilibrium of the fluids, to stimulate the obstructed or diseased parts to action, and lastly, to tone up the general system to a state of health.

Now, we beg leave to inquire, whether it is possible to meet these indications by the treatment of Prof. Wood? It must now be obvious to every reader that the difference between the Eclectic and the Allopathic practice, is not merely a difference of therapeutic agents, but one of plan—one that conforms to the organic laws, and sustains the organs of their manifestation. But to proceed:

As, in these inflammatory forms of disease, it is common for the feet to be cold, while the diseased part is hot, and attended by much febrile action, it will be proper, under the circumstances, to commence with a warm pediluvium and rubefacients to the feet and ankles; sponge the heated surface with water, not too cool to be agreeable, and administer by the stomach and by enema some bland and antispasmodic tea. If the stomach shall reject the tea, administer a mild emetic to allay irritation and cleanse the stomach; when, by this course, the fever has nearly subsided, it will be proper to give the patient a tepid or vapor bath, with antispasmodic enemas and drinks, and this should be pushed to emesis. If this antispasmodic course should not sufficiently impress the system or reduce the febrile action, recourse may be had to stimulating and relaxing alteratives.

In the meantime, the kidneys should not be neglected—in this and similar forms of disease, as much depends upon an active performance of their function as upon that of the skin.

Rice-water, corn-gruel, chicken-soup, etc., may constitute the food at this time, provided the patient is not at the breast. As a drink, water with any of the sub-acid fruits will be pleasant and agreeable.

To answer the last indication, such stimulants and tonics should be administered as will maintain a proper depuration.

CLASS III.

MANIFESTATIONS OF DISEASE IN THE RESPIRATORY APPARATUS.

INTRODUCTION.

IN entering upon the consideration of the respiratory forms of disease, we shall find death equally urgent in his demands, and perhaps no less successful in his enterprises, but we shall have a little less doubt and uncertainty in arriving at a correct diagnosis and prognosis—we shall feel that we are more in the path of science than in that of uncertainty and hypothesis.

We shall find, in our course, many occasions to lament that our predecessors have been so disobedient to the organic laws, as to have made it necessary that so much life must, in defiance of our skill, be wasted through the imperfection of the respiratory apparatus; and when we contemplate the immediate indispensability of a faithful and prompt performance of the functions of this class to the continuance of life, we should not feel surprised, that if exceedingly few of a faulty organization should be spared.

In these reflections, furthermore, we may find some excuse for ourselves—some consolation, that the fatality depends more upon the necessity of the function and imperfection of the apparatus, than upon any relative deficiency of professional ability.

The great cause of infant mortality must not, and should not, be sought in the normal peculiarities of infantile organization, as has been done, more or less, by all writers, or their manifestations of disease, but in those imperfections of organization which were entailed on them, and in consequence of which they become, to an extent, more or less, non-viable.

This is not all; many peculiarities incidental to the infantile

functions, are referred, by different writers, to different abnormal conditions, and consequently, an error of this kind may lead to errors of pathology and practice. Every physician should, therefore, study in the infants themselves, the normal peculiarities of their functions. This duty will become apparent before we conclude these introductory remarks.

The respiratory apparatus of infants is as indispensable to them at birth, as it ever will be, and yet between its functions in infancy and in adolescence there are some very strong points of difference, which claim our attention in this place, rather than in any other.

If we take seventy-five pulsations and twelve respirations, per minute, as representing the normal standard of the pulmonary and circulatory actions in adults, which probably is very nearly correct, and thirty-nine respirations and one hundred and two, as the normal motions of the same apparatus in children a week old, we shall discover in them, respectively, a remarkable difference, and one which will greatly deceive us, if we attempt to draw from them, *a priori*, conclusions in respect to any of the known results of respiration.

It is, for instance, well known that the respiratory function is indispensable to the calorific function, and that it is usual for a rapid respiration and circulation to produce an increase of temperature, and yet the temperature of an infant is much below that of an adult.

If we were to admit as true, a common impression, that infants have a sort of double duty to perform—to provide for their daily waste—to eliminate this waste in the form of effete matter, and also to build up their systems and repair the waste—we say, upon the admission of this proposition, we might contend for a double portion of function in the respiratory and circulatory apparatus; but while it is true that they perform one duty from which adults are exempt—the building up of the system—yet it is not true that they do as much in the repairment of waste.

In infancy, there is very little waste in the animal system, all of the emotional and intellectual portions of the brain are almost or wholly idle, and the same is nearly as true of the locomotive—producing scarcely any waste. In their digestive system there is, relatively less waste, because their food is

already assimilated to their purpose. Their whole duty then, is scarcely equivalent, indeed it is not equal, to the adult repairment of waste. In harmony with these conclusions we will find the results of their respiratory and circulatory functions.

Although infants breathe much more frequently than adults, they generate much less animal heat. The explanation of this we do not think so difficult as it has appeared to some writers on this subject. Men of active habits have usually an abundance of animal heat, and the activity of their habits occasions much waste. Now, if we contemplate the amount of oxygen requisite for the elimination of the effete matter, and for the supply of the daily waste, we shall discover an ample source of their animal heat; but in infancy, there is but little waste, and of course there is not much effete matter to be eliminated; now, if we include these two processes with that of building up, we shall not have an amount of demand for oxygen in the infant, equal, *cæteris paribus*, to that of the adult. This is not the end of the argument: the adult receives, as ingesta, more carbon and hydrogen, than the infant, and yet, by the aid of the respiratory function, he, as a general fact, uses it in the production of animal heat; but the infant, notwithstanding its rapid respiration, cannot use, for this purpose, the little it receives, but stores it away in the adipose tissue. How shall we account for this? We will give our explanation of it presently.

It is now an ascertained fact, that the amount of carbonic acid evolved at each expiration is diminished in the ratio of its increased frequency; consequently the conclusion is authorized, that we cannot compute the quantity of the pulmonary function by the activity of the respiratory movements; then, what is gained by the activity of the respiratory apparatus in infants, and wherefore the necessity of it? These are the questions we have now to answer.

In the onset of this inquiry, it must be remembered that the infant manifests very few animal functions; and these few are, comparatively, of but little importance to it; from this fact, it is to be inferred that that portion of the brain which was intended to preside over the animal functions is not in a condition to discharge its assigned duty, and will not be until

the functions that constitute the duty shall be required—that its power of volition is exceedingly feeble.

In the next place, we must consider the respiratory function as being, in a measure, when perfect, an animal or voluntary one. Highly concerned in this function are a great number of the voluntary muscles, and to the respiratory apparatus, as a whole, are sent many of the animal nerves. In the last place, the infantile lungs are of a pale red color—not the color of mature, adult, or perfect lungs.

The conclusions that appear to be justified by the preceding facts, are these: 1. The lungs being imperfectly developed, are incapable of appropriating to the use of the system all the oxygen that may enter them at any given moment. 2. The incapacity of infants for volition renders them unable to bring to the aid of this function the many muscles which were intended to aid it at a future period; because of this imperfection, the chest or thorax is never, ordinarily or voluntarily, fully expanded. 3. The preceding difficulties create a necessity for rapid respiratory movements, that is, rapid under the necessities of the case, to obtain that oxygenation of the blood which both health and development require.

The above conclusions are, it would seem, more satisfactory than those presented to us by Dr. West, who says: "There seems good reason for believing that the rapid breathing of the child is to some extent the result of its more delicate frame, rendering it unable, at a single effort, to inspire as deeply as the more robust adult, so that it is compelled, by the frequent repetition of its efforts, to make up for their comparative feebleness."

We do not like this language—it seems to convey the idea that the infant is not as well adapted to its mode of being as the adult is, which we can never admit. A healthy child is, vitally, just as strong as a healthy man—it can resist disease as well, and is as well adapted to its age. As their lungs are not fully developed, and therefore might be injured by extensive impressions of atmospheric air, and as their functions do not require that high state of oxygenation that is indispensable to the mental functions, the full expansion of their lungs is not required. For some time after birth, they appear to exist, in some measure, in conformity with the laws

that governed their intra-uterine existence. This conclusion is sustained by the imperfect condition of their lungs, and the low state of their temperature.

In adult life, the voluntary portion of the respiratory function, by long practice, becomes habitual and unconscious, as do many of the voluntary functions. That this is not the case in infancy, may be clearly inferred from their manner of breathing, which is intermittent or by pauses. Dr. West regards this manner of breathing as "another token of the feebleness of the respiratory power." "This respiration," he says, "is almost entirely abdominal; the chest moves but little and its walls are but little expanded." These facts do not support his idea of feebleness, but our conclusion, that the child has no power over the voluntary muscles, for if it had, the chest would both move and expand.

In the investigation of the morbid manifestations of the several parts involved in the respiratory function, we shall find it to be our duty, frequently, to add physiological remarks for the elucidation of symptoms or pathological conditions—therefore we will now close these general considerations.

ORDER I.

INFLAMMATORY FORMS OF DISEASE IN THE RESPIRATORY APPARATUS.

GENUS I.—CATARRH—

A Cold.

This form of disease, though very frequent and often troublesome, scarcely needed a formal notice—it very rarely does, directly, much mischief, and everybody has remedies for it, which are generally efficacious; we notice it merely because it is an affection which is probably more common to early than to adult life, because the mucous tissues are more vascular in the former period than in the latter.

Catarrh, when unattended by any other word to give it a special signification, is used to designate an inflammatory affection of the mucous membrane of the respiratory passages.

We shall have occasion to treat of individual portions of this membrane, but as the whole of it may be the subject of inflammation, at one and the same time, the word catarrh is used to express it.

It is difficult to determine why a catarrhal inflammation should be generally diffused in this mucous membrane, while those of which we shall treat should, in a very great degree be confined to particular portions of it. In catarrh, the cause appears to be general, while in the other forms of disease of this membrane, it seems to be specific. The facts connected with catarrh give it the character of a vicarious function, rather more than that of disease—which is really in some other part. Cold, acting upon the skin, under certain circumstances, so as to check its secretion, produces catarrh. The same is very frequently verified of the mucous membrane of the alimentary canal—a want of secretory action in this membrane often results in catarrh. The manifestations of disease in special portions of the respiratory membrane, must be accounted for by a reference to special predispositions or to specific causes. Prof. Wood says, that he has “never been able to discover anything specific in its (catarrh) character.” We think it to be specific, in being uniformly general, and not confined to any particular portion of the respiratory membrane.

Sneezing, though frequently occasioned by other causes, than those of catarrh, is very frequently the first indication of an assault by the latter, to which succeed, very rapidly, coryza, laryngitis, trachitis, bronchitis, and lastly, the tubes of the bronchia are involved; but it may commence in the bronchial tubes and travel in the contrary direction. In general, the grade of inflammation is low and about equal in all the parts assailed. Its seizure upon the pulmonary ramifications of the bronchia is apt to induce catarrhal fever.

When the catarrh is of a pretty violent character, it is quite apt to make a special assault upon the lining membrane of the nostrils, producing ozæna narium, from which is discharged offensive and often bloody matter, or it may specially assail the superior maxillary sinuses, producing ozæna antri high-mori; in either event much pain will be complained of, until the ulcers break. It is often difficult to cure these ulcers, and much time is usually required for it.

TREATMENT.—In the treatment of this, usually simple, affection, it is proper to direct our attention to the cause. If it has resulted from a suppression of the cutaneous function, then the indication is to restore this function—and if from a suppression of secretion in the liver or alimentary mucous membrane, then our attention must be respectively addressed to them. If the morbid affection shall commence or run into the form of coryza, angina, laryngitis, or bronchitis, the treatment will be found under these respective heads. When it makes its assault in either of these forms, it should meet with prompt attention, that such further consequences as are frequently known to ensue may be prevented. In general, the indications are, to equalize the circulation—remove all causes of irritation, and lastly, to restore the general tone of the system.

To meet the first indication, a tepid bath, or a vapor bath, which is preferable, aided by diaphoretic and antispasmodic agents, will generally be sufficient, more especially if the affection result from a suppressed secretion of the skin.

If the bowels have been at fault, aperients or stimulating enemas will be indicated.

The utmost attention should be given to the skin—it should be well cleansed and moderately stimulated; and this may be done by friction, stimulating liniment, Cayenne or Mustard, poultices, etc., more particularly to the feet, and foot-baths, with the internal use of warm diluent drinks, and in severe cases, expectorants and emetics.

GENUS II.—CORYZA—

Inflammation of the Nostrils—Cold in the Head.

In treating of this subject, we shall incidentally embrace the maxillary and frontal sinuses, because the general treatment of them is the same, and because they are generally, though not always, implicated at the same time. With the unlearned, the affection is generally denominated “a cold in the head.”

Coryza is an inflammation of the schneiderian membrane lining the nose and the sinuses communicating with it, and attended with an increased discharge of mucus. It is very generally introduced by frequent sneezing, which is soon followed by a discharge of thin, ropy mucus from the

nares. If the irritation pass into inflammation, the mucus will become yellow and then purulent.

This affection, in adults, very seldom demands medical attention, but the case is frequently very different with infants. The nares are not, to those above the age of infancy, necessarily air passages—the mouth may be substituted for them. Children cannot suck and breathe at the same time through the mouth—to them, the nose is indispensable—the nares are the true respiratory passages—infants always breathe through them, instinctively and spontaneously when they can, but when they are closed they are spasmodically forced to breathe through the mouth. When the nares are closed, no matter by what cause, infants, not having any reflective ability, do not open the mouth voluntarily to create an air passage to the lungs, but it is, by pauses, spasmodically opened by the vegetative demands of the system.

In this wise, a proper oxygenation of the blood cannot be effected, nutrition must cease, because they cannot suck and breathe at the same time, consequently, death must soon terminate their existence, and sometimes it does, even before death becomes imperative from marasmus.

Prof. Meigs has introduced, in his work on children, a case of this disease, and he has done it in a manner so well calculated to arrest the attention of a young practitioner, that we deem it proper to extract his account of it:

“Being notified, by an urgent message, of the dangerous condition of the young infant, I hastened to the house, and finding the friends solemnized by the approaching event, I, also, was at first convinced that the child was about to perish.

“It breathed after very long intervals, during which there was no apparent attempt to respire, and I noticed, that when it did make its aspirations, they were very sudden, rapid, and violent, after which it relapsed into its non-respiring condition.

“I did not understand the nature of the case, but I remarked that it could not be spasmodic nor pseudo-membranous laryngitis, nor, indeed, any laryngeal affection, because, when it did respire, it did so with full freedom and perfection, which could not be predicated of any affection of the larynx, of the bronchi, or the lungs.

“In the doubt in which I was placed, I took the child on

its pillow upon my knee, in order to inspect it more closely ; an inspection which left me no room to doubt that the obstruction was in the nares, and upon a closer examination, I found that the nares were entirely stopped up, as I before remarked. By means of the head of a pin, I removed the plug from the external nostril, but I could not free the deeper parts of the passages.

"Seeing that the child was about to die—and I have, at this moment, no doubt that it was, but for the rescue, within half an hour of its death—I lifted it in my hands, and applying my mouth to the nostrils and blowing violently into the openings, I loosened and discharged the plugs into the pharynx, after which it was in a few minutes perfectly well, and I had no further trouble with it."

However unimportant this disease may be with adults, this case carries with it the strongest conviction, that, with neonati, it may be attended with death, and often, too, as it is a malady of considerable frequency.

Every adult knows how difficult it is, sometimes, to breathe through the nostrils in this disease, and, admitting the nares not to be entirely closed, but even in a small degree so, it must to an infant be very distressing and injurious, inasmuch as it is not capable of converting the mouth into an air passage.

Infants usually sleep with the mouth shut, but when suffering under this malady, they cannot do it, although such is the effort to do it, that their rest is broken and unrefreshing. The respiration is noisy and attended with a sort of whistling sound in the nasal fossæ ; the respiration becomes more difficult as the nasal mucosities become more copious and consistent. The orifices of the nostrils should be closely watched, as the mucus, by drying, is constantly making an effort to close them.

There is, in some cases, such a rapid increase of the symptoms as to destroy the infant in three or four days ; but in general, as it does not prevent the child from sucking, it is not dangerous. It is with the tumefaction of the pituitary membrane that difficult respiration begins, and with it the danger.

The inflammation of the pituitary membrane sometimes

throws out mucus of such a quality that it concretes and forms a pseudo-membranous covering in the nasal fossæ. As this is preceded by all the symptoms of coryza, we may conclude, that the formation of the membrane only indicates a more violent form of the disease. It is rarely ever possible to diagnose the existence of this membrane. Post mortem examinations have shown the pituitary membrane to have been intensely inflamed. Such cases are generally, if not always, fatal.

Coryza may pass from the acute to the chronic form, and to harass the patient for many months, and finally destroy it by the disorganization it produces; very frequently implicating the brain, producing acute hydrocephalus more likely than any other disease. Such an event is preceded by drowsiness, prostration, and other signs of cerebral irritation.

CAUSES.—The most frequent cause of this malady, with children, is, no doubt, exposure to wet and cold—an exposure which requires vigilance to prevent. It is thought to be occasioned by a sudden check of cutaneous perspiration, more particularly when the application of the cold is partial, as to the feet and back of the neck. From the cause we have assigned, it may be inferred that the complaint is more common in winter than in summer. It is furthermore true, that some persons are more liable to it than others.

TREATMENT.—This form of disease is frequently so very mild as to require nothing more than such prudence as may be requisite to prevent an increase of it—it will be sufficient for this purpose to keep the patient still, its feet warm, and person comfortable, with some reduction of the food. But should it be so violent as to cause considerable complaint, it will only then be necessary to cleanse the surface by a tepid or vapor bath, or simply by washing it thoroughly with a weak lye; and while this is being done, the patient should drink a warm infusion of *Nepeta Cataria*, *Salvia Officinalis*, or *Scutellaria Lateriflora*, and have the feet in a tepid bath rendered stimulating by the addition of ashes, salt, mustard, or capicum; and then, after being dried with a warm cloth, to be covered warmly in bed with a hot and moistened brick, or a few ears of boiled corn, to the feet. Warm lemonade is frequently very beneficial as a drink while the patient is in bed.

In this stage of the malady, there is some tendency to constipation, which should so far claim our attention, by enemas, as not to permit the fecal accumulations to become a source of irritation. In the milder forms of the disease, this course of treatment will generally be sufficient.

Should the symptoms be more severe and attended with fever, the Powder of Ipecacuanha and Opium, in small doses, or Compound Tincture of Virginia Snakeroot, with a free use of warm diluent drinks, may be added to the above treatment.

If there should be much headache, with a full, strong pulse, poultices of Mustard should be applied to the feet, and the head may be bathed with the Cooling Lotion.

In case of much inflammation of the frontal or maxillary sinuses, the inhalation of vapor of Vinegar will be found useful, and which may be accomplished by placing a towel over the child's head, in such a manner as to retain sufficient vapor for inhalation, when the nostrils and mouth are placed over it; the steam or vapor may be obtained by throwing the Vinegar on a hot brick or shovel.

The pain in the frontal and maxillary sinuses is sometimes exceedingly severe, and for its mitigation many experiments have been tried. Dr. Wood states, that he knew an individual who obtained instant relief by snuffing powdered Cloves, and for the same purpose powdered Cubcbs have been used in the same way. It is said that Camphor held to the nose often affords relief. It is further stated, upon the authority of Dr. Harrington, of Philadelphia, that the inhalation of Chloroform gives immediate ease.

The discharges from the nares are sometimes exceedingly excoriating, and for the purpose of protecting the nasal orifices and the lip, a little Suet or Spermaceti Cerate may be rubbed on them. It is stated that these discharges depend upon the serum of the blood, and as it becomes diminished they cease; and upon this principle, Dr. Williams prohibits the use of all fluids, and with much advantage, as he conceives. The disease, under this treatment, rarely lasts more than a day, and hence, after two or three days of suffering, the patient is quite relieved, and may again return to the moderate use of liquids.

GENUS II.—LARYNGITIS—

*Inflammation of the Larynx.*SPECIES I.—*Acute Laryngitis.*

There is, among writers, considerable variety of opinion upon the subject before us, and after bestowing upon it considerable attention, it seems to us that Prof. Wood has manifested the clearest discrimination; and therefore, we adopt his divisions of it. Under the above head, he has three varieties: 1. Mucous Laryngitis; 2. Sub-mucous Laryngitis; 3. Pseudo-membranous Laryngitis—to which we have added, Spasmodic Laryngitis.

VARIETY I.—*Mucous Laryngitis—Cold in the Chest.*

This is an erythematic inflammation of the mucous membrane of the larynx, which, though of frequent occurrence among infants, is much more frequently met with in children of a more advanced age; but no age is exempt from it. It sometimes exists alone, but frequently follows coryza, and frequently arises in the course of scarlatina, variola, etc. It is not uncommon for it to descend and involve the trachea and bronchia, but more frequently extends upward to the fauces, and sometimes invades all. We usually find, by looking into the fauces, the velum, uvula, and fauces to be somewhat red.

The progress of this disease is usually rapid, but its symptoms are frequently obscure at first; the patient, however, will always be found manifesting more irritability and restlessness than would be expected from the existing signs of disease.

In infancy, the cry is sufficient to diagnose the disease when it is violent. It is frequently so faint as scarcely to be heard, while the reprise is, on the contrary, acute and predominant. This inflammation, even in its mildest form, is attended with an abundant secretion of mucus, which at first is clear and thin, but it soon becomes thick and yellow.

When the child sleeps, a quantity of mucus is apt to accumulate in the larynx, which may cause it to wake with a sudden start and threatened suffocation; it coughs, makes an attempt to cry, but cannot do it, until after a powerful effort, which dislodges the mucus that obstructs the passage to the

glottis. Although the air passage is very narrow, it is scarcely probable that an inflammation of the mucous membrane of the larynx could close it up so as to produce asphyxia; but, that tough mucus may so collect or accumulate in the larynx, as to produce such a result, is very probable. Asphyxia is produced by one cause or the other.

In the *post mortem* examinations of such asphyxied cases as we have been able to find of this disease, we have not found that the asphyxia was caused by tumefaction of the mucous or sub-mucous tissue; we infer, therefore, that it resulted from an accumulation of mucus.

This disease is frequently so mild as to attract but little attention, and even this mild form of it, in adults, is apt to destroy all audible voice, a whisper is the loudest sound the patient can make; in infants, the cry may be similarly affected. But the helplessness of infants renders the disease, however mild, dangerous to them, because of the mucous accumulations, which they cannot readily throw off—it is then, always dangerous to them.

Some degree of fever usually attends this disease, and it may appear simultaneously with the other symptoms, or not until they have appeared. It usually runs its course in five or six days, terminating in resolution, the secretion of mucus, or it may pass into the chronic state.

SPECIES II.—*Sub-mucous Laryngitis*—*Cold in the Chest.*

This is said to be the disease of which General Washington died. This circumstance not only distinguishes it, but gives it, almost, a diagnostic character.

Sub-mucous laryngitis is thought to be more common to adults than to children; and furthermore, it is thought to be only a violent stage of the mucous or erythematic variety. Some of the symptoms, such, for example, as commencing with a chill, which is followed by fever, attended with alternating sensations of chilliness and heat, would seem to indicate a disease of a more extensive invasion and consequently of more danger.

That an erythematic inflammation can be mild or violent, is not a matter of doubt, but when it leaves its proper residence, the surface, and seizes upon a sub-tissue, it is no longer

the same form of disease; consequently if the sub-mucous tissue of the larynx constitute a part of this affection, it is not simply an inflammation of the mucous surface, though it may have been originally. We do then, regard this as an essentially different form of disease, although an observance of the distinction may be of no diagnostic or therapeutic importance.

That there is not more than one or two per centum of fatal cases in the previous disease, is very probable, and if there be less than fifty in this, it is not so violent as we think it to be. We speak with reference to that kind of practice which General Washington had the misfortune to have. Many of the cases supposed to be of the previous variety, which terminated fatally, may really have passed into this, and effected the mischief, but to us, it is more probable that laryngeal accumulations of mucus did the mischief, because both varieties appear to maintain an independent consistency from beginning to end. In the treatment of infants, there must generally exist more or less of doubt, because, as they cannot communicate their feelings and sufferings, the means of a clear diagnosis must be greatly reduced.

If the patient be old enough to communicate his feelings, among the first symptoms of which he will complain, is sore throat—difficult and painful deglutition—and it should be remembered that this symptom should always excite alarm, unless we are satisfied that the inflamed condition of the fauces is sufficient to explain the full extent of the symptom, which it cannot do, when it is occasioned, mostly, by an inflammation of the epiglottis.

The function of expiration is perhaps always easy, but that of inspiration is exceedingly painful and difficult, because of the inflamed and swollen condition of the membrane of the glottis, which causes it to close against the entrance of the air, consequently the acts of inspiration are greatly prolonged and attended with a whistling, wheezing sound, as though the air was drawn through a reed.

When the air passage is very narrow, as it usually is with infants, it is not unfrequent, and it sometimes happens to adults, that the tumefaction of the mucous and sub-mucous tissues may produce suffocation, and then we have added to

the phenomena which usually follow such an event, the facial expression of great pain and suffering.

Vomiting very seldom attends this disease, but as the child sucks badly, it sometimes happens that at the moment of deglutition, the pain occasioned by the movement of the pharynx, will induce it to quit the breast and suddenly to cry, which will cause the fluid, in the œsophagus, to reflow toward the mouth, and in this movement of it, a little may enter the larynx and cause a sudden, suffocating cough that may greatly endanger the patient. Accumulations of mucus in the larynx may take place during sleep, and produce similar results.

In this disease, the epiglottis sometimes becomes so inflamed and swollen as to become incapable of a normal adaptation to the glottis, whereby particles of substances, in the process of deglutition, obtain access to the larynx, and produce intense irritation, which is succeeded by paroxysmal coughing and a painful difficulty of breathing.

In this stage of the disease, the child is exceedingly restless and distressed, never able to sleep but a few minutes at a time, so urgent are the demands for fresh air; its system begins to show signs of insufficient oxygenation—the surface becomes cool; the pulse becomes small, frequent, and feeble; the lips bluish; the face livid, and, in the respiratory efforts, the shoulders rise, the chest heaves, the skin becomes covered with a clammy, cold sweat, and then succeeds delirium, coma, and death.

But death does not always come on thus gradually—life is sometimes suddenly arrested by a complete closure of the air-passage to the windpipe; but without this event, so rapid is the course of the disease sometimes, that death may supervene at any time between seven or eight hours and three or four days; and yet, when the attack is mild and slowly progressive, it may continue three or four weeks, and then terminate in death, in resolution, in the chronic form, or by serous effusion into the sub-mucous tissue, and thus death may result from a recuperative process of the system, and it may not—depending entirely upon the extent of the effusion.

Cases have been witnessed, in very feeble infants, of an œdematous affection of the throat, in which the only marked symptom of laryngitis was the cry, the debility being, as was

supposed, too great to produce the inflammatory symptoms to an appreciable extent. But in these cases of œdematous laryngitis, œdema was found to obtain on various parts of the body.

DIAGNOSIS. — Constitutional results, resembling those of laryngitis, do sometimes attend manifestations of disease in the chest; but still, we cannot consider it as scarcely possible that either can be mistaken for the other. The seat of the pain, the change of voice, and the peculiar cough should always distinguish laryngitis from pectoral affections.

TREATMENT. — The treatment of the mucous and sub-mucous forms of laryngitis will be similar; it should be commenced with a mild emetic, as the Compound Tincture of Lobelia; after which, some slightly stimulating liniment should be applied to the neck and throat, two or three times a day, followed by the application of cloths wet with warm water, or a warm fomentation of Hops and Mullen leaves, around the throat. The feet and legs should be placed in a vessel of warm lye-water for ten or fifteen minutes, and which may be repeated daily, or even twice a day. Expectorants must be administered, such as the Compound Tincture of Lobelia, in small doses, repeated several times a day; or,

R. Syrup of Squills,
Syrup of Senega, aa ʒj,
Camphorated Tinct. of Opium, ʒij,
Tinct. of Lobelia, ʒj. Mix.

Of this, ten or fifteen drops may be given to a child five years of age, and repeated three or four times a day.

When children are sufficiently advanced in years to inhale vapor, the warm vapor of vinegar should be inhaled several times a day. The bowels should be kept open by laxatives, and if there be much febrile disturbance, the Compound Tincture of Virginia Snakeroot may be given in sufficient doses to maintain moderate diaphoresis, with warm diaphoretic infusions. Mustard plasters to the feet should not be omitted.

When these two forms of disease become more active, and consequently more serious, they demand a prompt and energetic course—the emetic may be repeated daily for several days; diaphoresis should be constantly kept up, and some

rubefacient applied to the back of the neck and between the shoulders.

The room should be kept warm, being careful not to allow a current of cool air to pass over the patient, and the diet should be extremely meager.

In the case of adults, the only variation in treatment is in the adaptation of the doses, the more active medication, and the use of a gargle composed of an infusion of equal parts of *Hydrastis Canadensis*, *Myrica Cerifera*, and common salt, to half a pint of which may be added a drachm of black pepper, and two ounces of vinegar;—the throat may be gargled with this four or five times a day.

After the severe inflammatory symptoms have subsided, leaving a troublesome cough, with irritation of the fauces, glottis, etc., the following compound will prove very beneficial:

R. Saturated Solution of Alum,
Syrup of Balsam Tolu, aa ʒij,
Camphorated Tinct. of Opium, ʒj. Mix.

An adult may take a tablespoonful of this compound several times a day, especially when the cough is very troublesome; children may use it in doses proportioned to their ages.

SPECIES III.—*Pseudo-membranous Laryngitis—Croup.*

In commencing the consideration of this form of disease, we have found ourselves considerably perplexed by the widely different opinions which are entertained by different writers. Dr. Cullen locates the disease in the trachea or windpipe, and Dr. Watson follows him; Dr. Billard and Prof. Wood locate it in both the larynx and the trachea; Rilliet and Berthez locate it in the larynx, and Dr. West locates it in either or both of these organs, and says, that “the chief morbid appearances are always discovered in the trachea, and air-tubes.” In treating of the *post mortem* appearance presented in this disease, he says:

“In cases of croup that have come under my observation, the formation of false membrane in the larynx has seemed almost invariably to precede its deposit in the trachea.”

It has been our conviction, since being a student of medicine, having at that time a special motive for an investigation of it, that it is essentially a disease of the larynx, but it may,

and probably does, very generally, involve the trachea, and may even extend to the bronchia. Prof. Wood very properly remarks:

“Croup is not essentially an inflammation of the trachea; it may exist without disease in that portion of the respiratory passage, and inflammation of the trachea often takes place in infants, as in other catarrhal affections, but the same is not true of the larynx, without producing the symptoms of croup. The complaint may be confined to the larynx, though it generally embraces also the trachea, and not unfrequently extends deeply into the bronchial tubes. It may, therefore, occupy one or several divisions of the respiratory passages. If any one part is necessarily affected, it is the larynx; for a case would scarcely come under the designation of croup, in which this organ should not be disordered, at least in its functions.”

If an inflammation of the trachea cannot produce the symptoms of croup, then an inflammation of that tube is not a necessary part of the disease; but if an inflammation of the larynx does produce *the* symptoms of croup, the croup is laryngitis—therefore, it appears to us a great want of philosophical accuracy to include the trachea in the definition of the disease.

In the above extracts, the professor has, and he has not, made an inflammation of the trachea necessary to the disease. His definition of the disease, which follows, when deprived of the italicised words, will be correct:

“Croup may be defined to be a disease, in which inflammation or high vascular irritation of the laryngeal or *laryngo-tracheal* mucous membrane, is combined with spasm of the interior muscles of the larynx, giving rise to peculiar modifications of voice, cough, and respiration.”

Notwithstanding our disposition to regard croup as a laryngeal affection, and notwithstanding that we find ourselves, in this respect, to be in harmony with the weight of the profession, more especially if numbers can give weight, yet we are disposed to confess, that there are some circumstances which favor the opinion of Cullen, which has been adopted by Prof. Watson—the first is an exemption from pain in deglutition, and a second is, there does not appear to be spasmodic action enough for it to be a laryngeal disease. With such authority,

however, as that of Relliet and Berthez, to say nothing of others, we may feel pretty safe in the conclusion to which our investigations and observations have drawn us.

As there is, perhaps, no disease that has given the profession more trouble than this, and as it is one which is attended with great fatality, we will be excused for having devoted so much attention to the precise and definite location of it. Without precision of idea there can be no precision in practice.

But our trouble is not yet concluded. There is another form of disease, or a modification of one, or, at all events, another set of symptoms, which are vulgarly and professionally mistaken for croup, but which is not the same as that above defined; and like croup, its precise location or character has not been agreed upon, by medical writers; some regard it as an inflammation of the trachea, but more generally it is treated as an affection of the larynx. It is designated by several names, as, spasmodic laryngitis, stridulous laryngitis, stridulous angina, false croup, and by Prof. Wood, catarrhal croup, to distinguish it from true croup, or pseudo-membranous croup. As neither of the other names is calculated to keep us clear of confusion, it is best, we think, to adopt his names. Spasmodic laryngitis may be confounded with the other, as both are attended with spasms, and so, also, of the other symptoms. With these remarks we return to the consideration of pseudo-membranous croup, or laryngitis.

Croup is an inflammation, essentially of the larynx, but it may extend through the trachea, and even into the bronchia, and according to some writers, even into the bronchial cells. It is attended by the rapid formation of a pellicular concretion, which is spread over the walls of the larynx, and, in some cases, lines the trachea and extends into the bronchia. Before the production of this pseudo or pellicular membrane, the mucous membrane is always much inflamed, red, and gorged with blood; the sub-mucous tissue also participates in the injection, and when the inflamed membrane is at the same time the seat of sanguineous exhalation, this exhalation is seen to be accompanied, or followed, by the concretion before named.

From these circumstances, it may be inferred, that croup is a catarrhal inflammation, or holds some striking affinities with

it, and the blood, normally destined for mucous secretion, becomes plastic by the inflammation, and thereby imparts to the mucus, a portion of its fibrin, and hence, by concretion, comes the pseudo-membrane that distinguishes this modification of disease.

Upon the general features and manifestations of this disease, the profession are pretty well agreed, but in many circumstances related to it, there is considerable contrariety of opinion, which, perhaps, is entirely referable to the difference of topography, latitude, telluric, and atmospheric conditions. All agree that it is not a disease incidental to the earliest periods of life, and yet, essentially a disease of youth, or early life, most frequently occurring between the ages of two and five years, sometimes younger, sometimes older, and among adults in the ratio of about one-tenth of one per cent.

In the commencement, the symptoms are precisely like those of catarrhal croup, and so they continue, until the voice begins to become whispering and the cough husky; up to this time, it is possible that there is only an engorgement of the respiratory passages, with a high state of irritation—the existence of inflammation is barely possible, at all events, no exudation has taken place. If the disease do not begin in the larynx, the introductory cough may, in nowise, differ from a common catarrhal one, and the voice may be equally of the same character; but after a while, the voice sinks to a whisper and no efforts of the patient can raise it; from sonorousness it becomes husky and apparently stifled in the throat, and appears in paroxysms;—following the cough, the inspirations are short and whistling.

Sometimes the disease begins in the bronchia, and then the introductory symptoms are those of bronchitis; sometimes its outset is in or about the fauces, and then the symptoms are catarrhal, and attended with sore throat and more or less painful deglutition, hoarseness being the first indication of an invasion of the larynx.*

* It is said that the colds or catarrhs of children are never attended with hoarseness. If this be true, and we believe that Cheyne is the authority, parents should give particular attention to it—it will give them a timely admonition of the impending danger.

But no matter where the disease began, the breathing at length becomes labored, and sounds as though it was passing through a contracted and unyielding aperture.

All audible voice now becomes extinct, and any effort to speak produces paroxysms of a low and smothered cough, with pain in the throat and superior portion of the thorax; an anxious expression of impending suffocation covers the face; the disposition is restless; the features are swollen and darkened, the breathing very difficult, and the extremities cold. Sooner or later the paroxysm relaxes—the patient obtains some rest; but before his wearied system becomes refreshed, he is roused by another paroxysm of, probably, increased violence—the respiration is hurried to three or four times its normal standard.

Sooner or later in the disease, febrile action sets in, and always in the ratio of the other symptoms; sometimes it appears at the very onset, and runs high.

Between this disease and laryngitis, proper, there is this analogy: both run their course rapidly, proving fatal sometimes in twenty-four hours, but more frequently in forty-eight; and then, again, it may continue five or six days. Dr. Craigie states, that whether fatal or favorable in its termination, it is never protracted beyond the eleventh day.

Upon the event of a favorable turn in the disease, the cough changes and sounds as if something had become loose in the trachea, and with this change there is a general mitigation of all the symptoms; the coughing brings up viscid mucus, sometimes patches, strips, and even tubes of the pseudo-membranous concretion. Finally, this membranous matter is either absorbed or discharged, and the patient recovers.

But, on the contrary, should no change have been manifested for the better, the sonorous and wheezing respiration will become so increased as to be heard to a considerable distance—every muscle that can aid the respiratory function is brought into requisition, the arms are spread asunder, the head is thrown back, the nostrils are extended, the chest drawn up, and the facial expression tells that it is all for breath—every expression of agony is impressed upon it, and it is manifested through every muscle of the chest and neck—the skin becomes cold and clammy, the pulse increases in quickness

and feebleness, the lips become livid, the face cold and pale, the brain, not being reinforced by properly oxygenized blood, ceases to superintend the struggles for relief, and the curtain of stupor or drowsiness drops before the scene, or it rallies the remaining elements of life into a last effort which results in convulsions and death.

It is not, however, always the case that the patient is permitted to struggle while there is strength, for life is frequently cut short by suffocation.

When the cry is so changed that the reprise portion of it can only be heard, and when, heard, it is acute and sudden, like the crowing of a young cock, and when the voice is lost, we may safely conclude that croup is present; but we cannot have an absolute certainty of it, until we see detached portions of the false membrane thrown up by expectoration.

CAUSES.—Croup is much more common to northern than to temperate and southern latitudes—much more common in dry, cold weather, with northern winds, than in any other; more common to a sea-coast, lake, or river situation than to interior ones.

It is now generally admitted, that not less than one-half of all the cases which obtain in cold latitudes, terminate fatally.

In this country, it obtains, but not frequently, and its fatality is not much less than it is in higher latitudes. The cases here, which are generally called, treated, and saved, as croup, are of the catarrhal variety. When croup does occur here, or further south, it is usually during the prevalence of northern winds and storms.

This disorder is not contagious, but in some situations it is reported to be endemic; its attacks are generally in the night, and during the one immediately succeeding the exposure of the patient to cold weather, insufficiently protected. Dr. Alison says, that it seems to be, not unfrequently, produced by the child's sitting or sleeping in a wet room.

In some families there seems to prevail a sort of croup diathesis, as it is common for many or all of the children to have it as they arrive at the proper age. It is also more frequently met with in males than females, and with sanguine lymphatic, sanguine-bilious lymphatic, and sanguine encephalo-lymphatic temperaments than others.

DIAGNOSIS.—Spasmodic, cerebral, or catarrhal laryngitis or croup, is the only form of disease with which pseudo-membranous laryngitis or croup can be confounded, and between these the diagnosis is so well marked that such a mistake should never be committed. This form of disease comes on slowly, more or less like a common catarrh; that, the spasmodic, attacks suddenly, and is but rarely, if ever, preceded by catarrhal symptoms. The former may appear suddenly, in some instances, but then its character is so essentially febrile, while the latter is not, that they need not to be confounded.

Febrile intermissions never attend the former, except occasionally after vomiting; but complete intermissions do attend the latter—remissions only characterize the former. The stridulous sound of the cough and inspiration so peculiar to the former, is absent in the spasmodic form. In the former, the pulse is excited and irritated, generally quick, tense, frequent, and full, with an increased or febrile elevation of the cutaneous temperature; but, in the latter, the pulse is small and contracted, and the cutaneous temperature continues natural.

PROGNOSIS.—This form of croup is always to be regarded as dangerous, and the extent of the danger is always indicated by the violence of the inflammation;—its danger, furthermore, as a general fact, is in proportion to the suddenness of the attack.

At one time a majority of the cases of this form of croup terminated fatally—it is still attended with much fatality, and necessarily must be so long as fever and inflammation are treated as forms of disease—so long as the idea of sustaining vital energies consist in breaking them down by bleeding and purging.

TREATMENT.—Bleeding, puking, and purging, with calomel, constitute the usual practice in this form of disease—and this, at one time, was our practice—we have given large doses of calomel to a child a year old, and sometimes we approved of the results so much that we abandoned the practice with much caution, fearing that we could not do better; long since, we rejoice, however, we not only abandoned the practice, but also the principle upon which it is founded.

We are required, in aiding nature in this form of disease, to relax the constricted or spasmed organs—the skin is in this condition, as indicated by its heated and febrile condition. In the second place, we are required to strengthen the debilitated organs, which are the larynx and probably the trachea, for otherwise, they would not have become the seat of obstruction or disease, and as a proof of the fact, they are highly excited and labor under an excessive action.

To meet the first indication, an emetic should be promptly administered, and which should be as promptly repeated, as often as the peculiar croupy inspiration occurs; and the most efficacious articles that can be used for this purpose, are the Compound Tincture of Lobelia, or the Acetous Emetic Tincture. After having produced free emesis, either of these tinctures must be continued in doses sufficient to produce expectoration, and in severe cases, even nausea. Hot water should be applied to the throat constantly, and the skin should be thoroughly cleansed, and as far as possible relaxed by the warm lye-wash.

In the meantime, or as soon as some cutaneous relaxation shall have been effected, the second indication should be attended to. For this purpose, Cayenne or Mustard poultices should be applied to the extremities and the neck, or as near to the weakened parts as possible. For this latter purpose, various poultices have been recommended; we knew an intelligent gentleman who regarded a poultice of roasted onions as an infallible remedy; Dr. John D. Goodman, says Dr. Gunn, regards dry Scotch snuff, sprinkled on a plaster (which may consist of a piece of greased linen, or it may be sprinkled over the face of any poultice), as a reliable remedy.

We think it very probable that the roasted onions have been very useful in some cases, and that Scotch snuff may have been so in others, but we are far from being able to regard any one application as being uniformly infallible. One drop of the Oil of Stillingia, placed upon the tongue, has in the practice of several Eclectic physicians, as well as in our own, rendered immediate relief, and ultimately, by its repetition, cured cases of this disease, which had absolutely resisted all previous treatment, and the cases were supposed beyond the influence of medication—thus fulfilling all the indications

claimed to be produced by the employment of calomel at the hands of the old school physicians. We have, also, found it beneficial, when applied externally, in the form of a liniment:

R. Oil of Stillingia, 3j,
Oil of Lobelia, 3ij,
Alcohol, 3iij. Mix.

The throat, neck, and chest must be bathed with this three or four times a day; and after each application, a fomentation should be applied, composed of two parts of Hops, one part of Lobelia, with equal parts of vinegar and water; boil together and apply the herbs.

The Nitrate of Silver, in solution, has been highly recommended as an application to the fauces, glottis, and even to the larynx, upon the plan proposed by Dr. Green, of New York, but as far as our own experience and observation have extended, we consider the treatment above-named as superior to any other with which we have yet become acquainted.

We have remarked that both bleeding and purging are quite universally practiced in the treatment of such forms of disease as produce inflammation, for their removal, and we have, in several places, intimated that both are enfeebling or prostrating—destructive of the vital forces, while neither of them is depurating, and consequently neither of them can be properly indicated in the removal of disease, because disease most frequently has its origin in defective depuration.

According to these views, and we hold them to be sound, we should direct our efforts to the renal and cutaneous secretions first, and then to those of the glandular system in general. The bowels, therefore, claim our attention no further than to see that their accumulations do not become a source of irritation.

Although we regard proper external applications to the neck as being of much service, by relieving the part of much of its capillary congestion, yet we should not neglect the use of stimulating gargles, such as the one recommended in the mucous forms of laryngitis, and if the child cannot gargle, this should be applied to the fauces and throat by means of a swab, and a small portion of it may be occasionally swallowed.

It often happens that when the croupy symptoms have been relieved, the evidences of constitutional irritation still exist;

in such cases, we may safely suspect that the liver, and probably other glands, have not resumed their proper functions. In such cases we may have recourse to aperient and stimulating alteratives.

The child should be kept warmly clothed, and the diet should be light, until convalescence, when, if prostration takes place, stimulants, tonics, and nourishing diet should be used.

VARIETY IV.—*Spasmodic Laryngitis* — *False Croup*, *Catarrhal Croup*.

This form of disease is never attended with the production of a deciduous or pseudo-membrane in any portion of the respiratory passages — the initiatory usually consists of such catarrhal symptoms as coryza, suffusion of the eyes, chilly sensations succeeded by those of heat, some hoarseness and cough.

These symptoms may continue for several days, or only for twenty-four or forty-eight hours, without much modification, which usually occurs at night and during sleep, consisting of the strongest indications of impending suffocation; such as cough and dyspnœa, with struggles of the muscular system in aid of the respiratory function.

Sometimes it is introduced by a croupy cough, some fever, and hoarseness, which may continue a few hours or even days, before the arrival of a paroxysm such as above described. The paroxysms, as they obtain in different cases, present two great extremes: in some they are quite mild, and excite no particular fears—in others, they are so violent as to produce the strongest apprehensions of immediate suffocation. Between these extremes every grade or degree of violence will be observed in practice.

During a paroxysm, the face is forced into those conditions and expressions which mark a case of strangulation—it is swelled, of a violet or dark red hue, the eyes are humid and projected in their orbits, the expression of the face is anxious, the respiration is hissing and protracted, the voice is reduced, but never to a whisper, the surface is hot, the pulse quick, and the cough, if present, which occurs at intervals, is hoarse. These are the usual phenomena of a paroxysm, and when concluded, sleep ensues.

A single paroxysm may terminate the disease, at all events, the patient will only be troubled with hoarseness and a dry, barking cough until the next night, when, if the disease have not terminated, the patient will have another paroxysm, possibly two, and thus the disease continues to its close, with one or two paroxysms per night.

In some cases, however, the paroxysms recur more frequently, and each one is characterized by more violence than the preceding, until finally a greater degree of violence becomes incompatible with life, and death, by asphyxia, closes the scene.

But in the midst of a paroxysm a change for the better may supervene, and when it does, it is usually indicated by signs of secretion, as a loose cough and the throwing up of some mucus; the violence of the symptoms is mitigated, the cough loses its harsh ring, the inspiratory sounds have a mucous character, the croupy and febrile symptoms disappear, and between three or four days and two weeks, the patient is well.

But, instead of a favorable turn, additional and more exhausting symptoms may appear, as great restlessness, nausea, and vomiting, followed by a small, frequent, and vanishing pulse, cold extremities, clammy sweats, coma, and death.

PREDISPOSING CAUSES.—However difficult it may be to determine, precisely, the pathological differences between the several forms of laryngitis, over which we have passed, the diagnoses, in general, are quite unmistakable. When we consider the fact, that they are all more or less inflammatory and involve the same parts, it would seem possible, and even probable, that catarrh might be provoked into the mucous laryngitis, and that the milder forms of this might likewise be converted into the more severe; and yet we have no reliable evidence that they do thus merge into each other.

The only explanation we have for this remarkable fact is this: certain telluric and atmospheric influences, peculiar to certain localities and latitudes, so dispose or constitute the system, that a cause which produces croup in a northern child, could not, *cæteris paribus*, produce the same form of disease in a southern one. To this law occasional exceptions may be admitted.

The admission of this principle, although we cannot com-

prehend its *modus operandi*, enables us to come to a conclusion, as to why it is that croup is frequent in one situation, and pseudo-croup in another. To contend that the south has no weather cold enough to prove an exciting cause, will not do, because the croup is produced in the north by weather more mild than some by which the south is visited.

There appears, furthermore, to be a croupal organization in some families, and that this organization does not exist in early infancy, and when produced, it does not continue usually into adult life, and thus it is that a liability to croup is measurably confined to a definite period of life.

Croupal symptoms and pseudo-membranous concretions are sometimes occasioned by scarlatina, but we have not, from any writer, learned that spasmodic laryngitis is ever produced in the same manner; and if it be not, then this circumstance adds to the evidence that croup and pseudo-croup are not different degrees of the same form of disease—that they are not varieties of the same species. From what we have been able to learn, we deem it to be as impossible for one form to pass into the other, as it is for catarrh, in early infancy, to pass into croup.

EXCITING CAUSES.—These are usually such as occasion catarrh—such as an improper or unprotected exposure to a cold and damp atmosphere, or sudden atmospheric changes.

This form of croup is liable to a frequent recurrence—as frequent as may be the exposures to the cause that usually produce it. All the forms of laryngitis may be regarded as being produced by the ordinary causes of catarrh.

DIAGNOSIS.—The diagnosis between the two forms of croup we have given under the head of pseudo-membranous croup, and therefore, in this place, we will barely add, that the seat of the pain, the change of the voice, and the peculiarity of the cough should always distinguish both forms of croup from all pectoral forms of disease.

PROGNOSIS.—All the forms of laryngitis, must be regarded as dangerous, if permitted to run their own course, but this form is much less dangerous than the pseudo-membranous, and therefore it may be regarded as generally favorable; and yet, when prolonged beyond the third day, and is still increasing in violence, and more especially when attended by

nausea and vomiting, an unfavorable termination may be expected.

TREATMENT.—When the affection is characterized by much inflammation, the treatment recommended for pseudo-membranous croup should be adopted. Lehman recommends us to apply a sponge, dipped in hot water and then squeezed out, upon the anterior part of the neck, and frequently repeated at short intervals, until the skin becomes red and a general perspiration follows, which should be promoted by the use of some mild, tepid diluent. In many instances, this means will arrest all the symptoms and cut short the disease.

With the exception that this form of the disease requires a liberal use of antispasmodics, the treatment should be very much as in the preceding form.

GENUS III.—BRONCHITIS—

Inflammation of the Bronchia.

SPECIES I.—*Acute Bronchitis.*

Under the above title, we include every case of inflammation of the bronchial tubes, which is of short duration, without any reference as to its precise location.

This form of disease in new-born children, may be of very short duration, and may originate in inappreciable causes, and in a few days spontaneously disappear. In such mild cases, there is frequently no other symptom than the mucus rale, or short, noisy, and frequent respiration without the rattle. Its beginning, sometimes, is that of catarrh — affecting the nostrils, fauces, or larynx, and from these parts descends to the bronchia.

In its mild form, it is vulgarly called a *cold in the breast*—manifesting its existence by hoarseness, mild cough, slight sensations of heat or possibly a little soreness in the thorax. It very rarely demands medication, and as rarely occasions any notable inconvenience.

After the age of infancy, the disease becomes more obstinate, and between the mild stage of it, and the severe, there is every intermediate shade of difference. It frequently shows its threatening tendency in the onset — and, no matter as to its precise location, the difficulty with which the air enters the

lungs occasions very serious symptoms. In such cases, it is apt to commence with coryza, sore-throat, sensations of lassitude, chilliness, and febrile reaction. Cough, being one of the first symptoms, soon becomes one of the most troublesome of its attendants. The symptoms, increasing in magnitude, soon give rise to such as threaten suffocation, a result, possibly, of a serous infiltration in the pulmonary tissue, or it may arise from some modification of the inflammation in the air-passages; but, as the cause may not always be the same, it is sufficient for the present that the lungs are not freely penetrated by the air.

When the disease has entered the smaller tubes, it is apt to invade the air-cells and produce pneumonia. In duration, the attack varies from four to ten days, and though frequently severe and threatening, its termination is not generally fatal. After two or three days a transparent, frothy, or ropy mucus, occasionally streaked with blood, is thrown up by painful and often convulsive coughing. The secretion increases, becomes more opaque, and ultimately yellowish or greenish, and with this change in the secretion the other symptoms become meliorated.

CAUSES.—A cold atmosphere, and more especially when moist, is, beyond doubt, the most frequent cause of this complaint; it can, also, be occasioned by both mechanical and chemical causes; among the first may be named fine dust of almost any kind, and of the second, acid vapors. The class of persons most liable to it is the sanguine encephalo-bilious, in whom animal sensibility is frequently found more developed than muscular motion. Those who are thus sensitive and liable, may be seen, in cold weather, with their necks muffled up—particularly behind the ears. We think it very probable that those children who are particularly liable to it are of the same constitution.

DIAGNOSIS.—This form of disease may be distinguished from most, if not all, others by the great oppression and tightness in the chest with but little or no pain; by the wheezing, rattling respiration; pallor of the countenance; by uneasy sensations in the recumbent position; severe pain in the forehead, which is much increased by coughing; and by the frothy, transparent, and viscid mucus

in the bronchia, attended with a moderate febrile excitement.

PROGNOSIS.—Under judicious treatment, the prognosis cannot, generally, be regarded as unfavorable, but still it is a dangerous affection—in some instances terminating fatally as early as the third day; but in most fatal cases death is protracted to the sixth day. Coma almost always precedes the fatal termination.

TREATMENT.—In the treatment of this form of disease, Prof. Eberle recommends a highly antiphlogistic treatment. We candidly confess that we know of no form of disease that justifies what is uniformly understood by such treatment—which mostly consists of bleeding, purging, mercurialization, etc.

We have shown in the introduction to this Book, that the immediate cause of fever and inflammation really constitutes the disease, and that it consists in an inability of the part to perform its function, and that this inability, when not occasioned by chemical or mechanical causes, can only be relieved by secretion and depuration, and as bleeding and purging incapacitate the system, and also the affected part to perform either of these functions, they must, as they really do, retard instead of promoting these functions. If debility is required, which is never the fact, it can be effected through secretion—if relaxation be required, and it generally is, it can be effected without these agents, and that, too, without breaking down the system.

In this form of disease, our efforts should be to produce centrifugal action in the system—the surface, therefore, should be relaxed—stimulant applications should be applied to the surface as near the inflamed parts as possible, as upon the back between the shoulders, upon the breast, upon the arms, and to aid centrifugal action, they may be applied to the feet and ankles; and, as adjuvants, diaphoretics should not be neglected. When an equalization of the circulation and excitement shall have become so far effected as to admit of secretion, the function of the skin and kidneys should be rendered particularly efficient, in order that the disease may be removed by depuration. Let this course be pursued with energy, and the fatality of bronchitis will be reduced fifty per centum.

SPECIES II.—*Chronic Bronchitis.*

In general, this form of bronchitis need not be considered, in children as a serious one, so long as the functions of the system, generally, are normally manifested. Some children will have it during the whole period of sucking, without any manifest detriment to the general health.

The acute form may pass into the chronic and occasion for a long time a mucous secretion from the trachea and bronchia, and, in children, it appears, sometimes, as symptomatic of inflammation of the pulmonary tissue. In such cases, there is a pretty constant cough, thoracic oppressions, noisy and quick respiration, attended with a very appreciable mucous rattle; the face is pallid and tumefied, and the skin is constantly hot. Under such a state of the respiratory system, the alimentary canal is not always exempted from a mischievous participation; its mucous membrane becomes so intensely inflamed as to be attended with disorganization.

As the disease usually exists, the symptoms are cough, short breathing, and the expectoration of an unnatural mucus; but the symptoms from which we are to draw our conclusions, as to its mild or mischievous character, must be sought in the quantity and quality of the expectorated mucus, and in the existence or non-existence of hectic fever and a tendency to marasmus. When the affirmative of these symptoms is present, a recovery is scarcely to be expected—there is less room for hope than in some varieties of consumption. But, notwithstanding the strong simulation of phthisis, which chronic bronchitis frequently presents, it may still be within the reach of medical aid, provided no organic change has been effected in the bronchial tubes or their mucous lining.

In a vast majority of the instances of this affection the patient appears in other respects pretty well—usually no fever is present, and with slight interruptions, produced by atmospheric vicissitudes or irregularities of life, which may occasion slight febrile paroxysms, it may continue for a very long time, presenting such abatement in warm weather as to give proper treatment a chance to effect a cure. But as the disease is, generally, closely identified with a feeble endowment of the vital forces, there will exist a great liability to a return of it.

In the event that, while in such a condition, it is not arrested, it may become more aggravated, because it is not in the nature of disease, nor, indeed, of anything else, to remain stationary; in such an event there may be expected to ensue a copious and purulent expectoration, containing probably a little blood, attended with debility, emaciation, impeded respiration, increased by exercise, night sweats, quick pulse, and such other symptoms as may constitute that form of disease which is usually denominated catarrhal consumption. This unfavorable condition of the disease, however, very rarely obtains among children, and yet, it is sometimes the case.

CAUSES.—It is thought by some, that the greatest number of cases of this disease have resulted from the acute form. We are inclined to a different opinion: it more frequently obtains with those who belong to the third class, page 20—those of feeble vital forces, and with them it is rarely ever acute—and when it is, it is generally mild.

Prof. Wood says, that a liability to this form of disease is frequently associated with “rheumatic or gouty habit of the system.” He should have made this remark under the preceding head. This variety is more common to those of a phthisical organization; it occurs occasionally as a sequel of hooping-cough and measles—in other instances, it occurs for a vicarious object, to fill the purpose of some suspended drain of the system. To the preceding, may be added those causes which usually occasion the acute form.

TREATMENT.—The principle that governs the treatment in the acute form, governs in the chronic, but the practice will differ in its details; in the latter, the same necessity for local applications does not exist, nor does there exist the same necessity for antispasmodics; secretion and depuration are going on, and therefore, they are not to be established in this form of disease—but the difficulty is, that they are performed by an abnormal structure—in other words, a diseased structure is vicariously performing them. In proof of this, we have but to refer to the excessive expectoration that characterizes the complaint.

Our treatment must aim at the establishment of a general centrifugal action, and a strong depurating one on the part of

the skin, kidneys, and liver, but more particularly the two former, and we may add, still more particularly the kidneys.

Dr. Watson says: "I have seen the excessive expectoration diminish, and the patients gain strength, under the use of the balsams, the Compound Tincture of Benzoes, for example;" but he seems to be entirely uninformed as to the *modus operandi* of the agent. The disease originated in a want of depuration, and finally it takes upon itself the depurating process, and balsams, by acting upon the kidneys and other depurating apparatuses, relieve the bronchi of this labor, and they return to their natural function.

Balsam Copaiba has been equally efficacious, and in the treatment of catarrh, we know of no more appropriate agent.

Dr. Watson again adds, that he has found the Sulphate of Iron very useful in this complaint. Iron does not directly promote depuration, but without oxygen depuration cannot go on, and as iron carries oxygen to all parts of the system, it becomes indirectly an indispensable agent. In cases of much anæmia, therefore, it will be judicious to administer iron separately or in combination with the balsams, or such other depurating agents as may be employed.

If the bowels should be in an abnormal condition, an aperient should be administered — as Rhei and Bicarbonate of Potassa.

GENUS IV.—PNEUMONIA—

Inflammation of the Lungs.

Inflammation of the lungs, in children, may be of the lobar or lobular variety, or it may consist of both. The first is an inflammation of the pulmonary lobes, and the second of the small lobules of the lungs. The inflammation may be confined to one lung or to a small portion of it, or it may involve the whole of one or even of both, in either form of the disease.

The malady, in infants, instead of being idiopathic, a result of developed pulmonary irritation, from atmospheric causes, appears to result from stagnated blood in the lungs; and, as this blood is unfit for, and really does not perform any function, it must be regarded as foreign animal matter, capable,

under the circumstances, of becoming combined with, and of altering the pulmonary tissue, to the formation of a new product, known as hepatized lung.

A brief recurrence to facts will show that it is very probable that infantile pneumonia must, generally, result from previous congestions and engorgements of the lungs. Pulmonary engorgements, in infants, more frequently occur in the posterior border of it, than anywhere else. All this is represented as being the case with infantile pneumonia.

Again, pleuritis is very generally associated with pneumonia in adults, but such is not the case in infants. Every variety and degree of hepatization and disorganization may result from the inflammation when once established.

A majority of writers, at least many of them, refer pneumonia, in infants and children, to the same causes that produce it in adults. To this opinion we cannot yield our assent, and for this reason: in infancy, and almost to the period of dentition, the mucous tissues possess less irritability than at any subsequent period of life. But during the dental process, that is, during the period of active development of all parts of the system, the mucous tissues are peculiarly impressible by atmospherical and all other causes which can exert an agency upon them. At and after this period, we admit that children are more liable to pneumonia from atmospheric causes than even adults; and we admit that a catarrh, in childhood, demands more concern and attention, than it would in an adult, because there is more liability of its producing mischievous consequences in the former than in the latter.

In infants, the symptoms are sometimes very obscure, so much so, that in the care of the best physicians they have died without exciting a suspicion of the existing malady; but when they are obscurely developed, they are, in the beginning, those of bronchitis, to which supervene a chill, and then an increase of heat and dryness of the surface, the pulse and respiration become accelerated, cough short and dry, and breathing difficult.

These symptoms, though well marked sometimes, are frequently so obscurely manifested, as scarcely to be observed. They are, however, greatly modified by age—the older the patient the more distinctly they are marked. The symptoms

above-named do not prevail long before their intensity is augmented ; the lips become red, the tongue florid and more dry, with a thick white fur along its center. Sometimes vomiting is present, at other times, diarrhea.

In pneumonia, the pleura is liable to be involved—the two constituting pleuro-pneumonia, but as the symptoms cannot be readily distinguished, in infancy, and as such a diagnosis would not modify the treatment, very little will be required to be said upon the subject. This implication, however, is very rare with infants, and hence it is not the result of pulmonary congestion. When, usually, it does occur, it is with children advanced beyond infancy, and then it is caused by atmospheric influences or other agents—such as produce pneumonia in adults.

It may be profitable to recapitulate a little the symptoms which occur with infants, and also with reference to pleuro-pneumonia.

In infants, febrile reaction is, perhaps, never manifested—this is a phenomenon of a more advanced age ; in the former, the surface is usually cold and livid, and the extremities œdematous.

In pleuro-pneumonia of infants, percussion of the chest gives a dull sound, auscultation of the diseased or hepatised lung discovers no respiratory motion, and the breathing is labored and short. The cry is imperfect and smothered—the cough is a mere circumstance, which may or may not be present, and as to expectoration, it is never practiced by infants.

Such is the irritability of the mucous membranes, during childhood, particularly that of the respiratory system, as to render pneumonia, three times out of every four cases of it, a supervening sequent upon other forms of disease, and in this circumstance consists its most dangerous feature.

It has, inherently connected with it, another unfortunate feature: those whom it has once assailed, it will assail again in preference to other persons. But these recurrences, as well as the first attack, may all be referable to an original organic liability, and not to any increase of susceptibility from having had it once or frequently—depending upon that organic condition of which we have already treated.

TREATMENT.—In this form of disease we should avail ourselves of every possible means to overcome the constriction of the surface, and to unload the lungs by inviting the circulation to the surface and extremities. The former may be effected by the lye-wash and the use of antispasmodic and stimulant adjuvants, and the latter by the use of sinapized sponging of the hips and chest, and what would be still better, a sinapized bath for the whole person, or a vapor-bath so hot as to render the skin quite red.

This form of disease, in infants, depends upon a mechanical obstruction — stagnant blood in the lungs, and the object should be to remove such as is not stagnant—to save one lung or as much of both as possible. But we should not neglect to establish secretion and depuration as soon as possible, because if the obstruction should happen to be vital, instead of mechanical, we may equally reach the case; therefore our attention should be directed to the kidneys as well as to the skin.

In this form of disease, Dr. West speaks in strong terms of the use of mercurial inunction;* but upon what principle, we confess that we do not know. Dr. Watson says, 'that our "chief dependence is upon revulsives, applied either upon the chest, or upon the surface generally, and *perhaps* upon a judicious mercurial course, particularly by inunction.'" About the mercurial part of the practice he seems to entertain some doubt, and very justly, we think.

In addition to the means already named, in the early part of the disease, one or two emetics should be given, and as the

* During the early part of our pupilage, we had a little girl in a poor family laboring with congestive chill, and not knowing what to do, we hastened to our preceptor for instructions. He told us to give calomel and to use mercurial inunction upon every tender surface of the body, and to apply heat as extensively to the surface as possible. We asked for the principle upon which he prescribed calomel and the inunction; he answered, "to stimulate—to stimulate."

As we were returning, we came to the conclusion that we could stimulate with more rapidity and certainty with French brandy and cayenne, and so provided ourself, and so practiced, and so succeeded. We have adhered to this practice, and as yet we have not lost a case of congestive chill. When our good-natured preceptor, Dr. Pierson, learned what we had done, he had, what he much enjoyed, a hearty laugh.

disease progresses, the patient should be kept under the influence of nauseants and expectorants, as the Compound Tincture of Lobelia, to be given in small doses often repeated ; and if the inflammatory symptoms run high, the Compound Tincture of Virginia Snakeroot, may be administered in combination with Sweet Spirits of Nitre ; of this tincture, to a child three years of age, three to five drops may be given in water every two or three hours, with about double the quantity of Spirits of Nitre, until the severe inflammatory symptoms have subsided.

To children of highly nervous and irritable temperament, the Compound Powder of Ipecacuanha and Opium, or some other opiate diaphoretic, may be given with advantage to reduce inflammation and lessen cough.

A warm poultice applied over the whole chest, will always be of benefit to children laboring under this disease—it may be made of Flaxseed, Elm-bark, or Hops and Hoarhound.

The bowels must be kept regular by mild purgatives, and excessive catharsis must be especially avoided.

For drink, warm infusions of *Asclepias Tuberosa*, or *Pterospora Andromeda*, may be freely given.

When there is much difficulty of breathing, the effect of congestion, ligatures applied to the limbs, even of very young children, will be found very serviceable ; and in the more severe forms, dry-cupping over the chest may be employed in addition.

Toward the latter part of the disease, when signs of debility present themselves, tonics must be given, with generous and nourishing diet, as milk, soups, weak brandy and water, wine, whey, and Arrowroot.

The best tonic is a combination of Quinine and Cyanuret of Iron ; and for stimulants, Myricin, Xanthoxylin, and Hydrastin may be advantageously employed.

In this disease the diet should be very rigid, confined principally to demulcent drinks and acidulous draughts ; no solid food whatever should be allowed, and the position of the patient should be gently and carefully changed from time to time, in order to prevent a stasis of blood in the dependent portion of the lungs, and which would increase or perpetuate the disease.

After the symptoms have lost their severity, and as fever disappears, the food may be gradually increased in its nourishing character, until the usual diet can be taken.

GENUS V. — PLEURITIS — PLEURISY —

Inflammation of the Pleura.

Billard states that this disease occurs more frequently with infants than is generally believed, and without any complication with the lungs. As indications of the malady at this tender age, he names "restlessness, cries, sleeplessness—a dull sound of the chest, although the cry may not be altered. From the circumstance of the unaltered cry, he infers that the lungs are not implicated—that air enters freely the pulmonary cells, otherwise the cry would be altered.

To the above symptoms, after another *post mortem* examination, he adds, "painful expression of the physiognomy, difficult respiration, coldness and lividness of the extremities, while the body was at a high temperature." In this case the lungs were, to some extent, involved, which may account for the difficult respiration, but he adds, that the cry was not altered in proportion to the increase of the disease. Of the pulse, he says: "I will not speak, in this disease, as in almost all others, of new-born children, it is very uncertain, and of little use in diagnosis."

As nothing, comparatively, is to be found among the writers at our command upon the pleuritic inflammation of infants, we cannot do better than to follow Mons. Billard. He proceeds:

"Notwithstanding all the care I have taken to ascertain correctly the symptoms, I am not able to offer anything of sufficient importance to enable us to make a correct diagnosis of pleurisy; but the symptoms mentioned are at least enough to satisfy us that there exists a great probability of the presence of the disease now under consideration, and this is all we can obtain at the bedside, when we wish to ascertain the seat and nature of the disease.

"*Chronic Pleurisy.* — Pleurisy may pass into a chronic state even in very young children, and give rise to changes in the tissue similar to those observed in adults. A little girl, aged three months, who had been feeble, pale, and sickly

from birth, and who had been several times in the infirmary with the most uncertain symptoms, died at last on the 18th of April, 1826. She had insensibly arrived at the last stage of marasmus, and had not been affected with diarrhea except in the latter period of life; she had never been affected with fever, and although the respiration was short, the tone of the cry did not exhibit any alteration, and the nurse remarked that the child died of languor.

"Upon opening the body, I found the small intestines red, tumefied, and filled with a large quantity of black blood in clots; the large intestines were healthy. There also existed a very violent pleurisy on the left side. Both the costal and pulmonary pleuræ were covered with a layer of plastic lymph, at least a line and a half in thickness. When this lymph was removed, the pleura beneath was found rugous and very much injected, while the lungs under its coating were found crepitant and perfectly healthy. When the lungs were cut transversely, a well-marked red line could be seen at the circumference of this organ, indicating the separation between the inflamed pleuræ and the healthy pulmonary tissue. The heart and large vessels were exsanguined; the fetal openings obliterated; the brain, although healthy, contained a small quantity of serum in the ventricles.

"From what has been related, we have seen that the emaciation and languor of this child were caused by an obscure pleurisy, the progress of which insensibly led to the death of the patient. In every instance, therefore, in which we see a child languishing, and becoming thin and feeble, we ought carefully to search for the cause of this condition, and endeavor to ascertain whether it does not arise from some obscure organic lesion; we ought not to remain in a security which would leave us tranquil spectators of a disease which perhaps might not have terminated fatally if we had examined with scrupulous attention into its cause, seat, and nature."

The information acquired by this *post mortem* examination is peculiarly interesting. It shows conclusively that even the pleuritic covering of the lungs may be, for a long time and fatally, inflamed, without, in the least degree, involving the lungs. It illustrates, too, the difficulty of diagnosis in this affection in infants.

As children above the age of infancy—an age in which the symptoms are developed, as in adults, are, if anything, more liable to this disease than adults, it may be well to define and treat of it in that relation.

Pleurisy, or pleuritis serosa, is perhaps, most generally preceded by chill and fever, oppression in breathing, but in a less degree than in pneumonia—but the pain is greater and more definitely located in one of the sides. When severe, it is rendered intolerable by a deep inspiration and by pressure upon the intercostal muscles. In consequence of pain upon inspiration, the respiration is short, and lying upon the affected side next to impossible. If the disease be located in the posterior portion of the pleura, all movements of the spine will give pain.

If the disease terminate in serous effusion, and it frequently does, there will be a considerable change in the symptoms—the breathing becomes more anxious and short, and a feeling of suffocation prevents the possibility of resting upon either side.

Inflammation of the pleura does not thicken it, if it do, it is very slightly, nor does this membrane readily soften or ulcerate; but, as we have stated, it throws out serum, and it throws out coagulable lymph, which spreads over adjacent surfaces, becomes organized, and false membranes are thus formed, or contiguous surfaces are united together by what is called adhesion, or adhesive inflammation. When the inflammation is of moderate severity, it usually terminates by *resolution*; when more violent, by an *effusion of serum*, or *coagulable lymph*; in cases of more violence, or in modified cases, it may terminate in *suppuration*.

Chronic pleurisy frequently simulates hydrothorax by a serous or purulent effusion; sometimes, phthisis pulmonalis; sometimes, without definite symptoms, it forms slowly; at other times, it succeeds the acute form. In the former variety, vague pains are complained of in the chest; the cough, which is usually present, is small and dry; oppression is felt at intervals, and so are febrile symptoms, as shivering, heat, thirst, and an inelastic or hard pulse.

In this form of the disease, the chest undergoes changes which it will always be important to investigate for diagnostic

purposes: the diseased side is more smooth, round, and motionless; the intercostal spaces may protrude, but more frequently they are only dilated; if the case be very chronic, the affected side may be the smaller; when the patient speaks, no vibration will be felt by the hand; the thoracic parities are sometimes œdematous; percussion gives a dull sound, except at the superior part of the chest, and the usual sounds from the diseased parts, as per auscultation, no longer exist; but no indication has been discovered to determine which is present in the chest, serum or pus.

INDICATIONS.—In this form of disease, there is a pretty general rigidity of the system, and therefore, a general relaxation must be effected; and, in the next place, all obstruction to free vital action must be removed, and lastly, when an equilibrium is obtained, it must be vigilantly sustained.

TREATMENT.—A warm pediluvium, the lye-bath, aromatic and antispasmodic drinks or teas, and enemas, if promptly employed, will satisfy the first indication, if at the same time recourse be had to revulsives, as warm poultices, heavily sprinkled with Cayenne, which should be applied as warm as the patient can bear, over the region of the pain, and frequently changed.

If the attack has been violent, antispasmodics and diaphoretics should commence the treatment, with the use, at the same time, of diffusible stimulants, and a gentle cathartic. An energetic perseverance in the use of these means will generally achieve success.

If physicians will bear it in remembrance, that in the treatment of all thoracic inflammations, the general system must be relaxed, and that all excess of vital action upon the affected part must be directed to the surface and inferior extremities, they will certainly achieve general success, without giving themselves any particular trouble as to the particular part affected.

They should, furthermore, remember, that a cure cannot be effected without active depuration, and consequently the renal and cutaneous secretions should be effectively brought into requisition and sustained by the administration of such tonics as the peculiarities of the constitution may indicate.

In congested cases, the failures we have witnessed were

because of the inefficiency of the revulsive measures—a tepid bath, a few bottles of hot water or hot bricks will not be sufficient—a more powerful and a more permanent impression must be made upon the cutaneous surface, aided by a liberal use of diffusible stimulants.

When the congestion is beyond the power of reaction, we have found Mustard and Pepper poultices, tepid bathing, and pediluvia but little better than nothing—they do not appear to act with sufficient promptitude. We have resuscitated the congested patient after death had fixed his seal upon every feature of the face, by the use of the hot vapor bath and the diffusible stimulants, followed by the use of tonics; and in such cases, we are not prepared to trust any other course of treatment.

In chronic pleurisy, we must mainly rely, for success, upon renal and cutaneous depuration, well sustained by appropriate tonics, expectorants, and stimulants. Revulsives and antispasmodics can only be occasionally indicated, though in obstinate and long-standing cases of chronic pleurisy, the Irritating Plaster may be applied with advantage on the chest over the diseased portion of the pleura; or Croton Oil may be applied once a day, until free pustulation is produced.

GENUS VI.—PHTHISIS PULMONALIS—

Consumption.

Phthisis pulmonalis consists of tubercles formed in the lungs, which, after an indefinite time, inflame and ulcerate; hectic fever universally attends it, and persists in gradually wearing down the patient, until, ultimately, death ensues.

SYMPTOMS.—Uneasiness is complained of in the chest, with paroxysms of coughing, or perhaps the cough is dry and short and attended with difficult respiration. Its next stage becomes indicated by the cough becoming very troublesome in the early part of the day—the dyspnœa is much increased upon the slightest exertion. There is a circumscribed redness of the cheeks, purulent expectoration, with fever in the evening, with wasting and colliquative sweats in the morning. The disease may now be regarded as confirmed.

The hectic continues and is constant, with pungent heat,

small pulse, colliquative sweats, diarrhea, and extreme weakness. In the forming stage, while miliary tubercles still exist, the only change that has become effected upon the exterior of the thorax consists of restrained movements under one or both clavicles. It is usual to discover, by percussion, a diminished sound at the top of one lung. Auscultation will discover that inspiration presents a murmur that is either more weak, rough, or confused, with a more distinct sound of the expiration. More wheezing and resonance attend the cough and voice, or instead thereof, mucous *rales* will be heard in the same part.

The motion of the chest is more discoverably diminished under one or both clavicles, when the tubercular disposition has become increased in quantity. The resonance of the cough and voice is increased; the expiration is more loud and superficial; upon auscultation, the inspiration will be found to be bronchial; on percussion, the sound will be less distinct. Whatever of the lung is left, is probably sound, or a puerile respiration will be manifested.

During the process of tubercular softening, auscultation presents a sub-crepitant *râle* about the apex of the lung, reaching downward from above. At the close of a deep inspiration, during or after a cough, this sub-crepitant *râle* is most to be heard. As the disease advances, a tracheal or cavernous sound attends both inspiration and expiration. As the cavern increases, the sound emitted, by percussion, becomes gradually clearer, and in some cases, tympanitic.

We have now, as briefly as possible, presented the condition, symptoms, and physical signs of this form of disease, as it usually occurs in adults, believing that we could not with more brevity and precision expose the variations which characterize it in childhood.

The disease as above defined, and as it occurs in children, are essentially the same, yet we shall find the symptoms and physical signs as obscure in the latter as they are lucid and distinct in the former.

A striking anatomical difference exists with reference to the distribution of the tubercularization. In about twenty-five per centum of adult cases, tubercular deposition will be found in

the bronchial glands, but its importance, even in these cases, is secondary to that of the lungs; but, with children, the tubercular disease of these glands is sometimes of more importance, than that of the lungs. This is not all. In very nearly one half the cases among children these glands contain tubercles.

In adults, the apparent perfection of the tubercles in the clavicular region of the lungs, and their immature and incomplete condition in their inferior portions, indicate that the disease began in the former and gradually extended downward; but in young children, the tubercles, in all parts of the lungs, indicate the same age, so much so that no particular one point can be selected as that in which tubercularization began.

The next anatomical difference worthy of note, is with reference to the cavities, or caverns, formed in the lungs at the two ages respectively. Their existence in children is much more rare, and when they do occur they are rather small excavations, than caverns, such as obtain in the adult lungs. They communicate with each other and with the bronchia. They are sometimes very numerous, and are occasioned by the softening of small tubercular deposits. They are not attended with that destruction of tissue which marks the disease in adults.

As regards the symptoms of this disease in childhood, we have to remark, that as age advances the differences between them and those of adults diminish. But during childhood, there are some obvious differences:—one is, that during this period there is not attending the disease hæmoptysis, and very rarely any expectoration. In young children the cough, in the commencement of the disease, is generally very slight, and the colliquative sweats are so inconsiderable as to pass frequently unobserved. Sometimes the child complains for weeks, loses appetite, flesh, and strength, before the cough arrives to excite any fearful apprehensions, and when it does come, it is so mild, short, and dry, that, but for its frequency, it would scarcely attract a notice. Indeed, the early symptoms are frequently so indefinite as scarcely to claim a careful diagnostic investigation. So true is this, that the complainings are referred to worms or to some other inconsiderable ailment.

Diarrhea attends this disease in children, as in adults,

but it does not seem to be attended with so prostrating an effect.

Tubercularization of the bronchial glands is, by no means, uncommon to infancy, but obtains much more frequently between the ages of two and six years. When it does occur in infancy, the special symptoms of it are lost in those of the lungs, and they, too, are as likely to be lost in those of a generally deranged nutrition.

A slight cough, accelerated breathing, diarrhea, vomiting, aphthous mouth, and red tongue, may be the symptoms attendant upon a large cavern or excavation in one of the lungs, and quite naturally might be mistaken for some disease of the digestive system.

Such cases illustrate the great importance of very special examinations into all the complaints of children. In every instance where it is possible for a doubt to exist, every important organ of the system should be investigated by all the means in possession of the profession. But we have not concluded our purpose of indicating the differences that exist between the signs and symptoms of this destructive malady in adults and infants, respectively.

There exist some strong differences in the auscultatory signs of the existence of this disease in the two periods of life before named, and though we should describe them with entire accuracy, the advantage would be exceedingly trifling to those who have no experience in the practice of auscultation, consequently, we shall be very brief upon the subject.

We remark, then, in the outset, that auscultatory signs of phthisis, in infants, are much less reliable than in adults; so much so, that they can, in our judgment, be of very little advantage to the physician who has not an immense practice, or very extensive experience in the subject.

With adults, the first indication of tubercular deposit in the lungs consists in what is usually denominated "coarse breathing," and the importance of this is augmented if it be attended with a dry rattling or gurgling sound; and it is rendered still further diagnostic by being heard with more distinctness in the infra-clavicular district of the chest. But, in children, this useful information cannot be had—we cannot decide whether the sound emitted is occasioned by pulmonary tubercle or other

source of irritation. If the sound above described should be obtained, it should cause us to suspect phthisical mischief, but we should remember that it may obtain from a cause of very inconsiderable importance. These remarks are equally true of the prolonged expiratory sound under the clavicle. These two symptoms, though of important diagnostic import in adults, are not without great distrust in children.

In adults, we are enabled to draw important inferences from the modifications of the voice, which is not the case with children, although they may be able to talk. It is not enough that we shall hear them pronounce a monosyllable—and they do not use sentences.

The voice of children, furthermore, has not acquired a character—it has not become fixed, and hence causes which could not affect the voice of adults, might greatly change that of children.

The difference between the breathing of the two lungs is often an important symptom in adults, but it is one upon which we can place no reliance in children, except from repeated experiments. However strong or coarse the breathing of a lung, in infancy, it may, in twenty-four hours, change sides. But if, after repeated experiments, we find the same lung to emit the same sounds, then they may be relied on.

We have thus found that those symptoms which pretty clearly indicate the existence of phthisis, in adults, are really of minor importance in children—this, indeed, we should expect from that extensive range of active sympathies which, at this age, prevail. The progress and rapid development of every tissue and organ in the system, constitute in them a plexus of such delicate irritations, that one diseased point must excite morbid action in every other; hence, in the treatment of infantile phthisis, we should at all times be ready to anticipate many varieties of complication.

CAUSES.—Upon this subject so little is known as to be almost equivalent to nothing—vague and uninformative conjecture appears to be about the sum of what is obtainable—nothing that approaches a rationale of the malady has been discovered. Under such circumstances, we can certainly be excused for venturing to attempt, to some extent, a solution of the difficulty, even at the hazard of committing some errors.

If there be any one point in the entire field of pathology, in which our discovery of the relations that exist between the lungs and cerebellum is likely to be of any avail, it is in this. In our introduction to this Book, we have shown that this form of disease, no more than any other, is hereditary, but depends upon, or results from, the influence of attending circumstances, upon a particular and broadly-marked variety of organization. In a majority of cases, the medulla oblongata preponderates, in development, over the cerebellum, particularly its lateral portions; and in the minority of cases, a reversed development of these organs obtains.

Tubercle is very far from being the only diseased manifestation that results from this organization—the whole tribe of passive congestions belong to it, more especially those of the brain.

Death, from cerebral forms of disease, is more common to children than to adults—but tuberculosis is more common to adults than to children, and both have, as the primary cause, the same organic conditions.

This peculiar organization is the remote result of that division of labor which is incidental to civil society—caused by sedentary habits and excessive mental application. The present time appears to be specially engaged in the production of cachectic subjects—all is being done for the advancement of mind, and nothing for the development of the physical system. Such influences, acting upon the sanguine-bilious, sanguine-encephalic, bilious-encephalic, and sanguine-bilious encephalic constitutions, will produce that organic condition which is a *sine qua non* to phthisis pulmonalis. We have never found this peculiar organization, in a single instance, among four hundred savage crania—this is a strong fact in support of the opinion that this organic condition is peculiar to civil society.

When we reflect, that a vigorous pulmonary function results more from necessity than from volition, or even the vegetative influence of the medulla oblongata, we must perceive the reasonableness of the preceding conclusions. By exercise, the blood is forced forward in the circulatory system, and of course into the lungs, and by this necessity they are forced to act. By a constant repetition of this necessity, not only the lungs

but all parts of the animal system, and indirectly the vegetative, must become strengthened and developed.

In sedentary life, the lungs act only through the vegetative necessity—through the action of the diaphragm; this explains why tubercular deposit begins, in adults, in the clavicular portions of the lungs. The vegetative influence upon the lungs can never promote, in a high degree, the development of the respiratory apparatus; to effect this end, we must resort to the exercise of the animal muscles in general, and this conclusion is sustained by all experience.

In infancy and childhood, when the circulatory and respiratory functions are ably performed, there is no danger of tubercle—whatever of morbid condition circumstances may occasion in the system, will be forced upon the skin in the form of eruptive disease, or taken out of it by depuration; but when a contrary condition of the vital system exists, we may justly apprehend danger from pneumonia, convulsions, chronic hydrocephalus, or phthisis—they all originate in a modification of the same organic conditions.

It is now a well-ascertained fact that feeding, without exercise, produces tubercle—this is well illustrated in stall-fed cows, and cage-fed rabbits, poultry, monkeys, and other animals. Now, at this point, we would like to be informed of the difference that exists between a cage-fed rabbit, or bird, or monkey, and a cradle-fed child? If the one is productive of tubercle, why should not the other be? We have elsewhere remarked, that children who become obese are not usually those who become tuberculous; nevertheless, we have taught that the exceptions are liable, and have named the condition under which it takes place.

A remarkable case of this kind is reported by Dr. West, which we shall introduce as confirmatory of our conclusion, and as an illustration of what we shall presently attempt to teach.

“A remarkable instance of this came under my notice some years ago, in the case of a little boy, nine months old, who was fat and ruddy, and had always had perfectly (?) good health, until the 10th of April. On that day he was taken with symptoms which his mother supposed to be those of a bad cold. On account of this, he was kept in the house, and

various domestic remedies were employed, though without any improvement, and on April 24th, he came under my notice. There did not then appear to be any urgent symptom, though the child seemed much oppressed at the chest. The case appeared to be one of rather serious catarrh, occurring during the period of dentition. The gums were lanced, and a mixture containing the Vinum Ipecacuanha was ordered, to which, finding the symptoms not to abate, small doses of Antimonial Wine were added on the 27th. On the 30th, I was informed that the child was much worse, that his dyspnœa was greatly increased, and that his hands and feet had been swollen for the last forty-eight hours. I found the little boy breathing fifty times in the minute, with great oppression at the chest, the face much flushed, the skin dry, the trunk hot, the limbs cool, and the hands and feet much swollen. Auscultation detected generally diffused small crepitation through both lungs, with indistinct bronchial breathing at the upper and back part of the left side. Three hours after this visit, the child died without a struggle, on being lifted out of bed for its mother to apply some leeches to its chest. On examining the body after death, a *very thick layer of* FAT was found every where beneath the integuments. The lungs presented an extreme degree of tubercular degeneration, and many of the bronchial glands were enlarged by the morbid deposit to the size of a pigeon's egg. Some of the tubercle in the lungs was softened, but it existed both in the form of yellow tubercle, of tubercular infiltration, and of masses of crude tubercle, formed by the agglomeration of many separate deposits. The pulmonary substance, in the intervals between the tubercular deposits, was of a bright red color in the first stage of pneumonia, and in many parts bordering on the second stage, and there was very considerable injection of the bronchial tubes. The various abdominal viscera contained tubercle, but it was not far advanced in the mesenteric glands."

It is proper to add, as a further illustration of such cases that infants of this kind have small contracted nares—chest and neck appear large enough, but the latter has but little expansibility, and that they usually cry but little, and hence, at this early age, it may be said, they have no exercise. In reference to the case just cited, it may be interesting to remark

that the child had been apparently in good health up to the 10th, and that in twenty days it died with tubercles as large as a pigeon's egg. It will scarcely be doubted, that while it was looking well and acquiring *fat*, tubercles were being developed.

Now, by a proper application of the developments which we made in the first book, and in the introduction to this, the solution of this and all similar cases will be found easy.

The child had had, comparatively, no physical exercise, and as the medulla oblongata had imparted but little energy to the diaphragm, it follows that the respiratory function was but feebly performed, and yet, nutrition does not appear to have suffered during the formative stage of the tubercle. The venous blood had been depurated more by the conversion of carbon into fat, than into carbonic acid in the lungs.

Now, if oxygen enough was not inspired to depurate the venous blood, enough was not received to prepare the chemical elements, that resulted from metamorphosis, for elimination, and tubercles resulted.

As it is possible that all of the superfluous carbon could be converted into fat, we are not prepared to say that tubercle is a carbonaceous compound—we are inclined to think that it is not, but would be exceedingly pleased to know certainly what it is;—but that it results from an insufficient pulmonary function, we have not a single doubt. In fat infants and children the liver performs but feebly its assigned function.

In those whose organic condition is the reverse of this—a large medulla oblongata and a small cerebellum, we have a different play of functional affinities. The liver and skin, in some measure, even in this latitude, aid the lungs in depurating the venous blood, while oxygen enough is not received to fit, for elimination, other chemical elements that result from metamorphosis.

We are far from being sure that consumptives do not receive as much advantage, in the south, through the renal secretion, as through any other. A fault in this function causes serious mischief, in the rheumatic organization, in one way, and it may do as much in an other, in this.

We think it quite probable, as in the preceding form of phthisis, an abundance of carbon is obtained, that in this,

because of a very feeble nutrition, there may not be enough in this, for the indispensable purpose of animal heat; and hence the reason why ardent spirits and sugar have been found to be beneficial in many instances.

In many subjects, no doubt, the lungs, though actively engaged in the respiratory motion, are incapable of much respiratory function. Oxygen enough to insure the elimination of the metamorphosed tissues is not received—animal heat is not maintained—the venous blood is not depurated, and, in a cold climate, the liver and skin can render but little aid, and therefore tubercular deposits.

By the use of brandy, the animal temperature is elevated, and consequently the nutritive process is increased, while the carbon and hydrogen of the brandy are converted into fat. We have but little faith in the ultimate utility of brandy or sugar as remedies.

Finally, we do not pretend to understand all of the affinities in this form of disease—but sure we are, that it depends upon those organic conditions in the brain which we have indicated.

The exciting cause in children is, very generally, an improper exposure to cold and damp weather or clothing.

INDICATIONS.—Obtain for the circulation a permanently centrifugal action, and rouse into activity the principal depurators of the system.

TREATMENT.—If we had to treat of this form of disease in adults, we should have much to say, but as it is, we shall be brief, because it is our conviction, that with children, it must very generally be fatal—because, as we have shown, it depends upon a fault in the organization, which, at this early age, does not admit of a remedy.

It is known that a southern climate secures a mitigation of all the symptoms in this form of disease; and it is also known that cold weather developes tubercle much more rapidly than warm, in those climates where the malady is produced. Now, if we connect these facts with that organic condition which we have shown to be a *sine qua non* in this disease, the inference becomes clear as to the special indications of treatment.

In such cases as that quoted from Dr. West, it is obvious that oxygen enough was not received by the system—that the

carbon of the venous blood was not combined with it, to the formation of carbonic acid gas, but with hydrogen to the production of fat.

From this circumstance, we are allowed to infer, that other ultimate or proximate elements, derived from metamorphosis, were not, by oxygenation, prepared for elimination, and being retained in the system, were converted into tubercles. We may admit that oxygen enough was received, but in consideration of defective depuration, more especially on the part of the kidneys, tubercles resulted.

In the other form of phthisical organization, the absorbing system is very active—the person is always lean, but the chest is contracted and the lungs are feeble, and while the depurating apparatuses readily prevent serous or aqueous plethora, the matter metamorphosed is not sufficiently depurated, as may well be supposed from the feebleness of the pulmonary function, and tubercle is again the result.

As, in the south, the renal and hepatic functions are much more developed than the cutaneous, and, as in the south phthisis can scarcely be developed, we conclude, that, in the treatment of this malady, we should, in a special manner, address our remedies to the liver and kidneys; consequently, we should place more reliance upon mild alteratives and diuretics, and particularly the latter, than diaphoretics.

By way of prophylaxis, Dr. Eberle recommends that the patient should live, measurably, on farinaceous food. This is certainly unsound doctrine, because it creates a necessity for an increased pulmonary action.

Dr. Watson says: "One man gives all his phthisical patients beefsteaks and porter." This selection is equivalent to none at all—the first is nitrogenous, and the second is carbonaceous. "Another," adds the doctor, "restricts all his to vegetables and asses' milk." In this instance, the milk is equivalent to the beefsteaks, and if farinaceous vegetables shall be selected, then they are equivalent to the beer.

Dr. Watson says, for himself, by the way of treatment, that we must keep the patient "on low diet and take blood." He next recommends emetics, and lastly, counter irritation.

Now, it must be obvious, that, if phthisis exists in consequence of imperfect depuration, and can only be cured by it,

there is no cause of surprise, according to the usual plan of treatment, that so very few, if any, ever recover from it. Indiscriminate low diet and bleeding are directly opposed to recovery—the balance of the treatment may promote an equilibrium of the circulation, but none is resorted to for the purpose of effecting a special depuration.

In this form of disease, we are hostile to the whole class of expectorants, because they promote an increase of action in the diseased part, instead of determining the fluids to other and legitimate depurating apparatuses. We would suggest, that, after a relaxation of the whole system shall have been effected, and the circulation equalized, the patient should live, mostly, upon azotized food, and by pediluvia, alkaline baths, and revulsives should maintain a centrifugal action in the system, and at the same time maintain a pretty active depuration of the kidneys, by the use of *Terebinthina Venita*, or *Copaifera Officinalis*, and, as an adjuvant, some preparation of iron will frequently, and indeed generally, be required.

We must confess, that we are not, exactly, making these suggestions for the benefit of more than a small number of phthisical children, because we view their case as hopeless—they were doomed, by their organization, to a brief existence. The physician may aid in repairing a lesion, but in the short space allowed him by children thus afflicted, he cannot remodel the organization.

ORDER II.

NON-INFLAMMATORY FORMS OF DISEASE IN THE RESPIRATORY APPARATUS.

GENUS I.—ABSENT OR IMPERFECT RESPIRATION.

During Uterine existence, the lungs are organized and developed with reference to a function which will not be required of them, until the atmospheric mode of being becomes requisite; but anterior to this event, they may become the subjects of disease, and even of disorganization.

As a very general fact, the lungs discharge promptly the function for which they were intended, and at the proper

moment of time; but in some instances they do not, and it becomes the duty of the physician to ascertain why they do not.

The condition cannot be one of asphyxia, because respiration has not been established—the case is not one of suspended function, but it is one in which the air has not penetrated the air-cells—the congestion is not such as constitutes true asphyxia. Such infants are marked with exceeding paleness and debility.

Upon the birth of such an infant, the larynx and bronchia should be immediately examined for such mucosity as may exist to the obstruction of the air in its passage to the air-cells. If this should be discovered to be the case, as it frequently is, it must be removed with a feather, or with the finger armed with a piece of fine rag; at the same time, the infant should be placed in such a position as to leave the mouth and nose uncovered, and in a position to receive fresh air.

In our efforts to establish the function, the lungs should be inflated, or rather, the attempt should be made to inflate them by closing its nostrils and blowing into its mouth, and then, by pressure on the chest, force it out; this exercise may be frequently repeated—dry friction, at the same time, upon the thorax may prove of much advantage.

In the event that there may be disengaged mucus in the trachea, the child may be held up, with its head down, and shaken a little, that it may pass down and out of the mouth. This effort should not be too readily abandoned, as the mucus, which may have been tough at first, often becomes thin and will run out, more especially if there be life enough to produce a few pulsations in the heart or in the cord, in the event that it has not been divided.

It is the practice of some to endeavor to excite cries in the child as a means of promoting respiration; but it is not unattended with a suspicion of mischief, because the efforts produced by crying may increase the current of blood to the lungs and augment the difficulty.

After each effort to establish this function, the ear should be applied to the region of the heart, to discover if any action has been produced. By these or other means, respiration has sometimes been thoroughly established, but in others,

too partially so, to sustain existence more than a few days or even hours.

When a sufficient strength of atmospheric life has obtained, it will be manifested by a short and deep sob, which is generally repeated at longer or shorter intervals, and when deferred too long, we may promote its return by again inflating the lungs.

When the function has become established, no matter to what extent, much subsequent care will be requisite—the child must not be fatigued—it must be attended to with warm applications, and be as little disturbed as possible, by dressing or other attentions.

Post mortem examinations of such cases show but little engorgement of the lungs, and in some cases, none; and if they sink in water, the two circumstances leave no room to doubt that air had not sufficiently entered the air-cells to maintain existence.

It is too frequently the case, no doubt, that the ligature is applied to the umbilical cord as soon as the child is born. In such cases, therefore, of suspended respiration, the child has a very slender chance of existence. The division of the cord has separated it from all intra-uterine life before the extra-uterine has become established. Prudence would, therefore, dictate that the cord should not be ligatured so long as there continues pulsation in it.

When respiration has become established, the circulation in the cord will, from the necessity of the case, cease; so long, therefore, as the cord pulsates, there is no very great danger to be apprehended; but should the pulsation in the cord have ceased, and a division of it is followed by a few drops of black blood, before the establishment of respiration, the case is one of danger, but not necessarily so hopeless as to forbid such efforts as have been recommended for its establishment.

GENUS II.—CONGESTION OF THE LUNGS.

Respiration, after birth, may be thoroughly established, and yet, infiltration and engorgement of the lungs may soon succeed. It is said to be occasioned by some disturbance to the circulation in the heart and large vessels. This may be very probable, but what is the character of this obstruction? Cases

of this nature are not of unfrequent occurrence, and sometimes they continue for a long time, and may be the cause of very serious consequences.

In pulmonary engorgement, the substance of the organ preserves its integrity, and it occurs more frequently in the right lung, than in the left, and in the posterior than in the anterior portions of it. It consists in an infiltration of blood or bloody serum into the substance of the lungs, and the quantity thus infiltrated is sometimes very great. The substance of the lungs crepitates less than when sound, under pressure; it is also more heavy than natural and less elastic, and is of a dark red color externally, and when cut it is red. It is sometimes the case, that the bronchiæ are red and covered with an exudation of bloody serum, in the body of the engorged portion. In hepatization of the lungs, there is no engorgement of the heart and large vessels, but in the engorgements of them, the contrary is the fact.

The symptoms of pulmonary engorgement in infants, are enveloped in much obscurity, and therefore, during life, it is very difficult to determine, certainly, what the ailment is—they are simulated by those of other pulmonary forms of disease to such an extent as to render diagnosis very uncertain; but, in the general, it may be said, that the face is purple; the respiration labored; the thorax has not the appearance of being perfectly developed; the cries are short, painful, and obscure; a dull sound is produced by percussion, and a sanguineous plethora of all the organs is indicated by the general color of the skin.

As pulmonary engorgement is frequently the precursor of pneumonia, we refer to it for the treatment of this form.

GENUS III. — APOPLEXY OF THE LUNGS.

Between this form of disease in infants, and that of adults, there is a considerable difference, and it occurs more frequently in the former than in the latter. In adults, it is attended with hemorrhage, and very generally symptomatic of an incurable disease; in infants, it consists of a circumscribed effusion of blood in the body of the pulmonary or interlobular cellular tissue.

The frequency of infantile engorgements, or congestions of

the lungs, accounts for the greater frequency of this affection. It may appear suddenly, or it may come on slowly, depending upon the urgency of the cause that determined the afflux.

The most prominent symptom of this condition of the lungs, is a suffocating cry; percussion indicates the absence of air in the affected part; occasionally, bloody mucus is expelled from the lung.

Under the influence of this malady, the pulmonary tissue becomes hard, and about its circumference apparently hepaticized; yet in some cases, it has been found considerably softened.

This disease always excites alarm, and very justly, but still, it is not always fatal. The effused portion of the lung may become encysted, and thus isolated, and finally, it may, possibly, be absorbed.

In this affection, no time should be lost in producing a revulsion of blood from the lungs—at all events, an equalization of it. For the further treatment of this disease, we refer to that of pneumonia.

ORDER III.

NERVOUS FORMS OF DISEASE IN THE RESPIRATORY APPARATUS.

GENUS I.—INFANTILE SPASM OF THE GLOTTIS—

Crowing Disease—Thymic Asthma.

So far as spasmodic action of the larynx and glottis is concerned, this affection resembles catarrhal croup, but here the similitude ends; the latter, as we have shown, is an inflammatory disease of structure, while the former is purely nervous—one of function; and one, too, which may mislead the student or young practitioner, without care—he may do, as others have, mistake it for catarrhal croup.

It commences usually in the night, when the patient is asleep, and suddenly produces an inability to inhale the air; to which succeeds a struggle of all the muscles that can exert an influence in promoting or aiding the respiratory function; just as we found it to be in a paroxysm of catarrhal croup, the head is inclined backward, the thorax is elevated, the

nostrils are spread, the mouth is open, the cervical veins are engorged, the face is flushed, swelled, and purplish, with a countenance distressed and anxious.

In a short time, or not until the moment of threatened asphyxia supervenes, the spasm relaxes, and the air enters the lungs, producing an acute or young cock-crowing sound, and the child is again well, or its respiration may be a little short for a while.

During the paroxysm, the extremities become singularly affected, sometimes, says Dr. West, "the thumb is drawn into the palm by the action of the abductor muscles, while the fingers are unaffected; at other times, the fingers are closed more or less firmly, and the thumb is shut into the palm; or, coupled with this, the hand itself is forcibly flexed on the wrist. In the slightest degree of the affection, the great toe is drawn a little way from the other toes; in some degrees of this affection, this abduction of the great toe is very considerable, and the whole foot is forcibly bent upon the ankle, and the sole directed a little inward. The affection of the hand generally precedes the affection of the foot, and may even exist without it, but I have never seen spasmodic condition of the foot when the hands were unaffected."

For a short time, in the fore part of this disease, during the intervals between the paroxysms, the child appears as well as usual, but this exemption only seems to be a preparation for a more dangerous condition of the malady.

The paroxysms become reproduced by such trivial causes that it is next to impossible to guard against their recurrence. A sudden change of temperature, the least exposure to a current of air, a slight mental disturbance, deglutition, or any pressure upon the larynx may provoke a paroxysm, more particularly at night.

The general condition of the child is a departure from health—the bowels are frequently attended with an alternation of diarrhea and constipation—evident symptoms are sometimes present of dental irritation, as swelled gums and a hot condition of the mouth. In a long-continued paroxysm, death is sometimes produced by suffocation; at other times, the oft-repeated difficulty of breathing produces such a condition of the brain that the child dies convulsed, or in some

other manner, equally indicating such a pathological condition of it as might be induced by imperfectly organized blood, or congestion from paroxysmal forces. If from these agencies, it should escape death, convalescence will be greatly protracted, because it cannot be protected against occasional returns of the disease.

CAUSES.—The causes of this affection are as numerous as are the sources of disturbance to the general function of health. Whatever disturbs digestion, by improperly exciting the gastric branches of the pneumogastric or eighth pair of nerves, may produce it; also disturbances of the dental process, by acting upon the dental branches of the fifth pair.

It may also be produced by derangements in the function of the intestinal canal, by which the spinal nerves become improperly excited, and, through them, the spinal marrow, the recurrent laryngeal, and those appropriated to the diaphragm and intercostal muscles.

Dentition is thought to be the most frequent of the exciting causes of this nervous malady. We much prefer the idea, that as the disease occurs most generally during the period of dentition, a period of general development, and therefore of general irritation, that the muscles of the glottis and larynx are morbidly excited by a special display of the irritation peculiar to the dental age; because, in many cases, perhaps in a majority of them, though happening in the dental period, they were not occasioned by any morbid action in the dental process.

Furthermore, this nervous malady has happened with infants at the age of eight or ten weeks, consequently, long before the period of dental irritation; and it has happened long after the completion of this process—thus showing that there is no necessary connection between the two.

The disease is sometimes produced by such local causes as enlarged cervical and bronchial glands pressing upon the recurrent and eighth pair of nerves.

There cannot be a reasonable doubt, but that this and similar forms of disease are frequently occasioned by some peculiar pathological state of that portion of the encephalon which gives origin to the nerves which are distributed upon the spasmed part.

We have the skull of a boy, sixteen years of age, who died of the consequences, as stated upon the hospital register, of onanism. His respiration was in the highest degree asthmatic for some time previous to death. *Post mortem* examination of the cerebellum discovered a tubercle in one side, and a mass of encysted pus, of about the same size, in the other. He was affected, also, with paralysis of motion on one side, and of sensation in the other.

If such results can be produced by such causes, then there cannot be a doubt but that a spasm of the glottis may result from local cerebral irritation. We are disposed to confine this variety of the disease, at least, to those children in whom the middle portion of each cerebellum is relatively small. We have never known a case of asthma or phthisis in which this part of the brain was not defectively developed.

Upon the subject of this variety of spasm of the glottis, Prof. Meigs has given several interesting illustrations, and one of his paragraphs is so interesting, as to the purely nervous character of the malady, that we cannot refrain from extracting it :

“I have witnessed very numerous specimens of quite young children affected with laryngismus or croupal respiration, occurring occasionally, and being repeated daily, and even many times a day for a month in succession, in whom no other sign of the least disorder could be discovered, and which finally ceased to appear. In such cases, the children have grown and prospered, as well as if not the least suspicion of doubtful health had arisen concerning them.”

To this cause he refers the “Parson’s Cough,” and the holding of the breath among children.

As a further illustration of the subject, we have the skull of a man who became exceedingly angry, and while in his rage died instantly of suffocation, occasioned by a spasmodic closure of the glottis.

As the disease generally obtains, it is one of little moment, and yet, its existence may well excite fearful apprehensions, inasmuch as an obstinate persistence of the spasm has produced asphyxia and death ; and even if this result be escaped, the frequent interruptions of the respiratory function, with the

struggles that attend them, produce such a congestion of the brain, as may end in convulsions and death.

TREATMENT.—When treating a child during a paroxysm of laryngismus stridulus, it should be immediately raised to a sitting posture, and gently fanned, and the Compound Tincture of Lobelia and Capsicum should be given by mouth or enema, to overcome the spasm; after which, the Compound Tincture of Lobelia should be administered in doses sufficiently large to produce emesis—though it must be borne in mind that, in this form of disease, emetics are attended with some danger.

The throat, neck, and chest should be bathed freely with the Compound Tincture of Lobelia and Capsicum, or with Oil of Lobelia, and, after each bathing, a fomentation of Hops and Lobelia, of each equal parts, boiled in water, should be applied around the neck as hot as the patient can bear; these local applications should be continued as well during the paroxysms as in the intervals between them.

The liniment composed of the Oils of Stillingia, Lobelia, and Alcohol, recommended in croup, may, if preferred, be used as a local application, instead of the above. There are no agents so useful in this affection, to overcome spasmodic action of the glottis, as the preparations of Lobelia.

If the child be teething, and there is the least heat or swelling over the advancing teeth, the gums should be freely and deeply lanced, once or twice daily.

Should gastric or intestinal irritation be present, or constipation, especial attention should be bestowed upon the diet, selecting that which is light, nourishing, easily digestible, and not disposed to cause acidity of the stomach; at the same time, laxatives may be given, as Rhubarb and Bicarbonate of Potassa, to which, in some instances, a small portion of Podo-phyllin may be added, and these laxatives may be repeated every day or two.

If there is diarrhea, the Compound Powder of Rhubarb, or Syrup of Rhubarb and Potassa, will be found fully sufficient to overcome the difficulty in the majority of cases, and when it fails, Geranin may be administered in doses proportioned to the child's age, in connection with the powder or syrup above.

Dysuria occasionally accompanies the affection, for which an infusion of Marsh Mallows may be given, with the addition of Spirits of Nitr. Dulcis, and one or two drops of Tincture of Stramonium.

If the fauces are swollen, a weak solution of the Nitrate of Silver should be applied to them by means of a camel's hair pencil.

In the intervals between the spasms, agents must be used to prevent their return, for which purpose, either the Compound Tincture of Cramp-bark, Compound Pill of Black Cohosh, or Compound Pill of Valerian, may be used—the bowels kept regular, and all species of excitement, either mental or physical, should be carefully avoided.

If the case be very intractable, in addition to the preceding, pustulation should be produced over the seat of the disease, by rubbing on Croton Oil.

As the child improves, tonics, as Quinine and Iron, may be employed, but the diet should remain the same.

In all cases, where it can be accomplished, a removal to the pure, mild air of the country will be found to facilitate the cure.

GENUS II.—NERVOUS COUGH.

This form of disease, taking society at large, is not unfrequent, but its occurrence among children is only occasional, more especially with the very young.

So far as has been observed, it exists exclusively in a cough, which, although having several modifications, is unlike any other, more especially when associated circumstances are taken into consideration—independent of these, it occasionally has some resemblance to that of catarrh, and even, to some extent, simulates hooping-cough, but with these there are other indications of disease. It has not been detected in the chest, and, except when most obviously a symptom, it seems to exist independently of disease, for the patient, though much annoyed with it, has no other indication of ill health; consequently, it is thought to be purely a nervous affection.

A variety of it frequently exists as a symptom of gastric irritation, through the instrumentality of the per vagum; but when it is of this character, it is easily detected by every physician, and therefore, it does not, in this place, demand our

attention. Furthermore, it does not closely simulate the idiopathic nervous cough which at present alone engages our attention.

This cough presents no discoverable indications of being symptomatic, and it is usually dry and short, unless rendered otherwise by a severe and lengthened paroxysm of it, whereby the respiratory apparatus, in general, is excited by it, and then a little mucus may be thrown up. Its sound, however, is sometimes more full, lengthened and liquid.

With some children, it will occur at irregular intervals throughout the year, without reference to season, and without reference to time, as to day and night; with others, it occurs only during the cold season, and with some it occurs only during the night.

It sometimes presents such a hollowness and loudness of sound, as to arrest the attention of all observers. The paroxysm may consist of only two or three coughs, or it may consist of a single cough at frequent and irregular intervals, or it may be almost continuous through both day and night—allowing the patient but little unbroken rest; or it may occur in paroxysms of such severity as to excite perspiration, a secretion of mucus in the respiratory passages, and a full and flushed condition of the face.

When hearing the cough, we cannot realize that the chest is either deep or capacious enough to produce it—in this respect, and even sometimes in the sound of the cough, we have thought it to simulate the sound made by some frogs. The listener is, furthermore, astonished, to find such a cough to attend the appearance of so much health.

The most notable instance of this kind, which we have seen, is that of a very healthy girl, about fourteen years of age. She has been exempt from it during the three preceding summers, but it has troubled her very much during the succeeding winters. In all other respects she has excellent health.

There is, in her case, an organic circumstance which deserves notice—her fauces and pharynx are exceedingly developed and appear entirely healthy. If all such patients have so large a pharyngeal chamber, all the peculiarities of the cough may be accounted for.

This patient, furthermore, is very plumply developed, flesh firm, neck rather short, complexion fair, the chest large, but not flexible, the nose is small, and the nares are contracted—contra-indicative of a vigorous pulmonary function. In her case, the nutritive and cutaneous functions are well performed, and, from the lively character of the skin, we would infer that her kidneys do not perform as much duty, as they generally do.

As this is the only well-marked case we have seen, since the formation of our present physiological views, we are unable to determine how far her peculiar organic conditions are involved in the production of the cough; but this much we are willing to venture: if this cough is always associated with such an organization, more or less, then the cough is but an indication of an imperfect pulmonary system, and consequently of a deficient renal one.

This conclusion finds some support in an observation made by Prof. Wood; in speaking of the cause of this affection, he says: "I have seen it associated with tenderness of the spine between the scapulæ. I have also seen it, apparently, the result of *gouty* and *rheumatic* irritation."

TREATMENT.—Dr. Wood states that he has found nothing so effectual as *Asafoetida*. We have tried this, and know that it will give almost immediate relief, but it will not effect a cure—the cough will return. Based upon our pathological suspicions, we would suggest, for the purpose of trial, much exercise, the use of light clothing, azotized food, and diuretics.

In this disease, much benefit may be derived from the use of the following compound:

℞. Podophyllin, gr. j,
Cyanuret of Iron, grs. v,
S. Morphia, gr. ss,
White Sugar, 3j. Mix.

Divide into twelve powders; give one powder three times a day, to a child about three years of age, or in proportion. In connection with this:

℞. Iodate of Potassium, grs. iij,
Tinct of Belladonna, gtt. xx,
Distilled Water, 3vi. Mix, and give a table-

spoonful every half hour.

A strong infusion of Peach Leaves, or Wild Cherry Bark, may be used as a drink through the day, which will be found to have a sedative influence upon the cough.

GENUS III. — HOOPING-COUGH.

When we reflect that this disease is almost peculiar to children—that it stands third in the order of fatality, and that it occasions, in the parental mind, much painful anxiety, it must be admitted to deserve particular attention; much more, we fear, than it receives from a large portion of the profession, because of the fact, that all grandmothers, and a large proportion of the mothers profess to understand and to treat it.

But as physicians, this circumstance should not abridge our attention to it; on the contrary, we should as thoroughly as possible understand it, and then we should diffuse our knowledge of it to all the mothers in the land. This course is more imperative with this disease, than with any other, because every child, as a general fact, must have it.

A close attention to its peculiarities renders it of easy diagnosis—it consists of paroxysms of coughing, in which there is a lengthened and thorough inspiration, followed by a succession of short expirations or coughs, until no air continues or remains in the lungs. When the disease exhibits these two well-marked symptoms, there can be no doubt as to its individuality, whether hooping attends it or not.

For the purpose of a more detailed definition of it, some advantage will be obtained by dividing it into three stages, the catarrhal, the spasmodic, and the declining; the first two are, generally, quite distinct, and the third is not of very difficult recognition. The catarrhal stage is of very indefinite duration; Dr. West states, that the average of fifty-five cases was twelve days and seven-tenths, and that two extremes were, respectively, two, and thirty-five days. But, in six of the fifty-five cases, there was no formative, or so-called first stage, they were paroxysmal from the start.

We may say then, as an approximation, that the forming or first stage continues two weeks, more or less, and is scarcely ever attended with any symptom that distinguishes it from catarrh. It begins with coryza, red and suffused eyes, sneezing, irritation of the fauces, dry cough, and sometimes febrile

symptoms. More is to be determined from the prevailing presence or absence of the disease than from symptoms during this stage. If catarrh is prevalent at the same time, which is not usually the case, it has been observed to run the same course (save the spasmodic and whooping symptoms), as though it originated in the same cause.

The distinguishing symptom of the second stage, is spasm—the whooping sound of the inspiration may commence with the spasms, but frequently it does not supervene upon them, under several days, and occasionally not at all.

In defining the disease, we stated that the paroxysm formed or commenced with a protracted inspiration—the whooping, when present, is occasioned by it, and that the coughing consists in the discharging or expiring the air of this inspiration, in broken, or interrupted, or spasmodic efforts, each of which constitutes a cough. A paroxysm may continue from thirty seconds to the fourth of an hour. During a paroxysm, the face becomes flushed, then purplish or livid, the cervical veins distended, eyes prominent and probably suffused.

It is thought that during the opening and closing of an epidemic of this disease, the cases which are marked by a protracted forming stage, are produced. This would seem to imply that the cause is less concentrated.

It is further stated, that when the catarrhal stage is protracted, the spasmodic stage will be mild, or comparatively light; but on the other hand, it is not said to follow, that when this stage is short, that therefore the one of spasm will be more severe. The absence of the hoop, in the second stage, is regarded as an indication of intensity or violence. We do not remember to have seen it noted, that in those cases in which the violence of the spasm forces blood from the nose, mouth, and ears, and to extravasate the conjunctiva, were, or were not, attended by the hoop, yet so far as our own observation has extended, the hoop has always been present in these instances.

In some cases, as we have remarked, the second stage begins the disease with high fever, dyspnoea, and other indications of bronchitis, but upon the subsidence of these acute symptoms, the real disease becomes developed. After the spasmodic character of this stage has become clearly defined,

some days elapse before it reaches its maximum, and during this time, it is worse through the night than through the day. In milder cases, there is but little, if any, difference in the paroxysms between the day and the night, and it frequently happens, that when the patient is tolerably well all day and rests pretty well at night, it will have a severe paroxysm at going to bed and another upon rising in the morning. The first, probably, is caused by going into a cooler room for bed, and the second by the bronchial accumulations of mucus through the night. So long as a strong, loud hoop attends the disease, we can feel sure that the spasm does not close the glottis, and therefore the child is safe from suffocation for the present.

When the disease has obtained its acme, it may continue with about the same intensity two or three weeks, when the third stage commences—the paroxysms become less frequent, the inspirations less protracted, and the broken expiration less spasmodic—in fine, the disease, again, takes on the catarrhal form, and the patient is comparatively well; but at other times, the termination is not so speedily favorable—it is sometimes marked with relapses, or it may assume the chronic form, and thus become protracted to months, and possibly to a year or two.

When, however, the disease does not take a favorable turn, all the symptoms of the second stage continue to increase in violence, the whooping-pauses in the paroxysms cease to be heard; a short inspiration, however, is made and the coughing returns; at length, as the paroxysm is going off, the hoop may again be heard, and though not so loud it will be more stridulous. The paroxysms become more frequent, and the intervals are measurably filled with dyspnoea—the inspiration is no longer announced, or but seldom, by the hoop, the cough changes, the larynx becomes closed, struggles ensue, the constriction at length yields, and the respiration is effected. These paroxysms so increase, that before one is completed another commences, and thus they recur, until one of them closes the scene.

The greatest danger from this disease, however, results from its complications, which are numerous, as with convulsions, croup, diarrhea, inflammation of some portion of the intestinal

canal, with tubercular predisposition, bronchitis, etc. Pertussis is admitted to be epidemical, and some contend that it is contagious.

Prof. Bigelow says, that it is one of those diseases which cannot be shortened or mitigated to much extent. We admit that it cannot be materially shortened, but we feel pretty confident that it may be materially mitigated by such a course of medication as it naturally indicates—which is to equalize the circulation, remove constriction, establish depuration, and maintain a centrifugal action in the system.

TREATMENT.—It is very seldom that the practitioner is called in the first or catarrhal stage of pertussis, unless the symptoms are very severe, in which case he will treat them upon the principles indicated under the head of Catarrh.

Sometimes the first stage is wanting, and the disease then assumes its peculiar characters from the commencement; but, more usually, this stage is mild, and it rarely happens that the physician is consulted, except in the second stage, when the disease is properly manifested.

As we cannot expect to curtail the duration of pertussis, our only course is to employ measures to moderate its violence and diminish the frequency and intensity of the paroxysms; for this purpose, during the earlier part of the second stage, should inflammatory symptoms be present, an emetic should be given, daily or every other day, according to the urgency of the case, and which should be followed by an expectorant.

To fulfill both of these indications the Compound Tincture of Lobelia will be found the most effectual agent—and indeed, from its antispasmodic influence, it will prove, in many instances, an agent fully sufficient to accomplish all that can be desired, and that too, even after the inflammatory symptoms have subsided.

In this affection, constipation should be overcome, and the bowels kept regular, not by active cathartics, but by mild, laxative agents.

After the inflammatory symptoms have fully subsided, some of the specific remedies, so named, may be given—among which, however, we prefer the following, having used each of them with much advantage:

R. Carbonate of Potassa, ℥j,
Pulv. Cochineal, ℥ ss,
White Sugar, ʒi,
Distilled Water, ʒiv. Mix.

Of this, a teaspoonful may be given three or four times a day to a child one year old, and in proportion.

Alum, likewise, affords prompt relief in this disease, and may be given according to the following formula; it does not constipate the bowels or produce any injurious effects, except its tendency to cause vomiting when given in large doses, and to induce diarrhea from too long an employment of it:

R. Alum grs. xxv,
Syrup Ginger, ʒij,
Water, ʒiij. Mix.

Of this, an ordinary sized teaspoonful may be given every six hours to a child a year old.

In protracted, obstinate cases, a change of air will be found advantageous, often cutting short the disease at once.

Infants sometimes have the paroxysms very violent, so much so as to cause an apprehension of suffocation or convulsions, to overcome which, Dr. Meigs recommends the application of compresses dipped in cold water to the sternum, or a piece of ice wrapped in linen and suddenly applied to the epigastrium.

In those instances where, from spasmodic closure of the glottis during the paroxysm, there is a suspension of breathing for several seconds, greatly endangering life, the free use of the Compound Liniment of Stillingia and Lobelia, referred to under croup, may be freely applied to the throat, neck, and chest, for the purpose of preventing such closure in subsequent paroxysms.

The clothing of the child laboring under pertussis, should be warm, with flannel worn next to the skin in cold or damp weather, and in such seasons, it should likewise be kept in the house; but in fine weather, during the second stage, the free, open air, in the middle of the day, will prove beneficial. The diet should be nutritious and easy of digestion, and given at regular intervals, always being careful to avoid intestinal fermentation.

CLASS IV.

MANIFESTATIONS OF DISEASE IN THE CIRCULATORY APPARATUS.

ORDER I.

NON-INFLAMMATORY FORMS OF DISEASE IN THE CIRCULATORY APPARATUS.

GENUS I.—ESTABLISHMENT OF INDEPENDENT CIRCULATION.

THIS subject has been so interestingly and ably developed by Mons. Billard, that we feel it to be our duty to present to our readers his investigations without modification or abridgement:

“I have studied with the greatest care the changes which occur in the heart, ductus arteriosus, ductus venosus, and umbilical arteries, during the first days of extra-uterine life, and shall exhibit here the results of these researches.

“I shall consider successively—1st. The period at which the fetal openings are obliterated; 2d. Their mode of obliteration; 3d. I will exhibit the physiological and pathological consequences which naturally flow from these researches.

“I. PERIOD OF THE OBLITERATION OF THE FETAL OPENINGS.

“*Infants of the age of one day.*—In nineteen children, aged one day, there were fourteen in whom the foramen ovale was completely open; in two of them it had begun to be obliterated; and in two it was entirely closed. Consequently no blood passed through it.

“In the same children, the ductus arteriosus was free, and filled with blood in thirteen; its obliteration had commenced in four, and in the remainder it was completely obliterated. I also noticed that, in one of the last mentioned children, there

was a complete occlusion of the foramen ovale. In the other children, in the same state the ductus arteriosus was still open.

“With respect to the umbilical arteries, they were still open near their junction with the iliac arteries, but their caliber was narrowed in consequence of a very remarkable thickening in their walls. In all these children, the umbilical vein and ductus venosus were free, and the latter was most generally gorged with blood.

“From this examination, it appears that the foramen ovale and ductus arteriosus are still open on the first day of birth in most instances, although they may be obliterated at this period.

“*Infants of the age of two days.*—In twenty-two children, aged two days, there were fifteen where the foramen ovale was perfectly open; in three of them it was almost obliterated, and in four entirely closed. In thirteen of these children, I found the ductus arteriosus still open; in six the obliteration had commenced, and in three was entirely obliterated. In all, the umbilical arteries were obliterated to a greater or less extent, but the umbilical vein and ductus venosus, although empty and flattened, would not allow of the passage of a moderate sized stylet. These facts are sufficient to demonstrate that, in most instances, the foramen ovale and ductus arteriosus are not obliterated on the second day after birth, although the child may enjoy independent life; as to the umbilical arteries, having now become useless, they undergo the changes resulting from their default of action.

“*Infants of the age of three days.*—I also subjected the bodies of twenty-two children, aged three days, to the same examination. In fourteen of these the foramen ovale was still open; in five the obliteration had already commenced, and was complete in the remaining three.

“The ductus arteriosus was also open in fifteen; the obliteration had commenced in five, and was complete in two. Both of these subjects also presented the closure of the foramen ovale. The umbilical vessels and the ductus venosus were empty and obliterated in all these subjects. Now, it is evident that these vessels are obliterated before the foramen ovale and ductus arteriosus have undergone any complete

occlusion, and it can therefore be asserted, that at the third day the ductus arteriosus and foramen ovale are not generally closed.

"Infants of the age of four days.—I found in twenty-seven children, aged four days, the foramen ovale open in seventeen. In these seventeen cases, there were six where this opening was very large, and distended with a considerable quantity of blood, and in the remaining number it was slightly open. In the twenty-seven cases now under consideration, the closure of this opening had commenced in eight, and it was completely closed in two.

"The ductus arteriosus was still open in seventeen children ; its obliteration had begun and it exhibited nothing more than a small hole in seven of these, and its closure was complete in three ; the umbilical arteries, in almost all, were obliterated near the umbilicus, but still susceptible of dilatation near the junction with the iliac arteries. The umbilical vein and the venous canal were completely empty and considerably contracted.

"Infants of the age of five days.—Twenty-nine children, aged five days, were subjected to the same examination as in the preceding instance ; thirteen exhibited the foramen ovale still open ; but this opening did not exist in the same degree in all. It was largely dilated in four individuals, and in ten others its diameter was much smaller.

"This passage was almost completely obliterated in ten individuals, and in six others sufficiently so as to leave no communication between the auricles.

"I found, in these twenty-nine cases, the ductus arteriosus open in fifteen ; in these, there were ten where the duct was very large. The obliteration had made considerable progress in the remaining five, and was almost complete, or at least the caliber of the duct consisted of nothing more than a narrow hole, in seven, and in seven others the obliteration was complete. As to the umbilical vessels, their obliteration was complete in all.

"We have seen, thus far, that the fetal openings remained free in a number of children five days after their birth. None of the children exhibited any peculiar symptoms which appeared to have their seat in the circulatory apparatus. We

shall find the number diminish in subjects of more advanced age than those which have already been the object of our researches.

“*Infants of the age of eight days.*—I have not observed any well-marked difference between children of six or seven days, and those which we have just described. This remark, however, is not applicable to those of eight days. Indeed, I have found but five where the foramen ovale was still open in twenty cases that I examined. It was partially closed in four individuals, and its occlusion was complete in eleven.

“In these twenty children, there were but three in whom the ductus arteriosus was not yet obliterated; one of them presented an aneurism of the duct of the size of a hazelnut; interiorly, it was covered with a thick layer of a yellow color and fibrinous consistence, analogous in every respect to those fibrous layers which cover the interior of an aneurismal pouch.

“In these twenty individuals, I found in six the ductus arteriosus almost entirely obliterated, and its obliteration was complete in eleven. The umbilical vessels were perfectly closed in almost all; I say almost all, because I observed neither the umbilical arteries nor vein in five of them.

“From the last examination, it appears that the fetal openings are usually obliterated on the eighth day, but they may yet be found open even on that day; I will also add, that even on the twelfth and fifteenth day, and in the third week, the foramen ovale or ductus arteriosus may still be open, without the child experiencing any particular symptom; for I will again observe, that I have chosen for these researches children who, for the most part, died from affections in which the respiratory apparatus did not participate.

“From this exposition, it is evident that the fetal openings are not obliterated immediately after birth; that the period at which this occurs is extremely variable, yet the foramen ovale and ductus arteriosus are usually closed on the eighth or tenth day. It results, also, from the examinations we have made, that the modifications which follow the cessation of fetal life, in the circulatory organs of a new-born child, occur in the following order: the umbilical arteries are first obliterated, then the vein, next the ductus arteriosus, and lastly, the

foramen ovale. The persistence then of the fetal openings, for some days after birth, ought not to be considered as a disease, since it is not uncommon to meet with it without having given rise to any particular symptom. This irregularity or tardiness is attributable, as will be presently seen, to the mode of obliteration.

“II. MODE OF OBLITERATION OF THE FETAL OPENINGS.

“When the arrangement, which gradually occurs in the foramen ovale, from the earliest months of conception until the period of birth, is examined, it will be perceived that the form of this opening and the disposition of the surrounding parts, and particularly that of the eustachian valve, are such that the blood, which at first flows without any obstacle from one auricle to the other, by degrees experiences some difficulty in its passage. Sabatier especially has remarked this. Thus the first modification in the organization of the heart forces the blood to change its course; this fluid, in itself inert, is under the immediate dependence of the moving power which projects and directs it through the proper passage. If this be so, it must also follow, that in those parts which the blood leaves, an anatomical modification occurs, which changes the form and modifies the action of these organs, and produces in the blood which flows through them, a change of direction. Now, if the umbilical arteries and the arterial duct are examined, in proportion as they become obliterated, it will be seen that their walls gradually become thickened. The thickening of the umbilical arteries is more remarkable at the point of insertion at the umbilicus, at which point they exhibit a kind of swelling which materially affects the caliber of the artery, and this swelling appears to be the result of a species of hypertrophy of the yellow, elastic, fibrous tissue; whence it follows, that the artery exercises, at this part, a contractile force superior to the dilating power of the blood propelled by the iliac arteries. It is very easy to prove the thickness of the walls of the artery, by cutting it in sections at this part; the thickness, it will be also perceived, diminishes in proportion as we approach the iliac arteries, and it is precisely in this direction that the progress of the obliteration is observed to occur after birth. Two conditions, therefore, cause the blood,

after birth to leave the course it had while in the uterus: 1st. the establishment of respiration and the pulmonary circulation; 2d. the modification of texture occurring in the umbilical arteries.

"The following phenomenon proves also that the contractility of the umbilical vessels is susceptible of suspending the course of the blood in them; if the umbilical cord be cut at some distance from the umbilicus at the time of birth, in a plethoric child, the blood will at first be seen to issue in a jet with considerable force, then becoming slower, and afterward stopping altogether; if another portion of the cord be cut, another jet of blood occurs, and soon stops. This hemorrhage may be renewed at each section of the cord. M. P. Dubois has informed me that he has seen this frequently occur.

"Now, the course of the blood is in some degree arrested, because the umbilical arteries contract on it and force it to retrograde; if there exist near the umbilicus and within the abdomen a portion of the umbilical arteries more contractile from the existence of a greater quantity of elastic, fibrous tissue, it can easily be conceived that the course of the blood in the child, becoming less quick when the calm which occurs after birth begins to be established, these arteries may have power to resist from the first the progress of the blood; in proportion as the child advances in age, the artery becomes more obliterated, and, undergoing a kind of traction from the progressive widening of the abdominal parietes, it loses altogether its vascular form, and is transformed into a true ligament.

"What is observed in these arteries occurs also in the ductus arteriosus. In the embryo, it is as flexible as the other arteries, and is, therefore, as easily dilated by the column of blood which flows through it, which penetrates without any obstacle into the aorta; but at birth, and after this period, the walls of this duct become gradually thicker, and a sort of concentric hypertrophy is developed in them, which, without diminishing in appearance the size of the vessels, nevertheless produces a contraction of its caliber, by which the blood driven from this duct passes through the pulmonary arteries. When the ductus arteriosus has undergone this hypertrophy and obliteration, I cannot describe it better than by comparing

it to a tube, the circumference of which is very thick and that presents in its centre nothing more than a small hole.

“The obliteration of the vein and duct does not occur in the same manner. These vessels do not exhibit, as do the others, any remarkable thickening of their walls; the moment the umbilical cord is cut, the vein is no longer susceptible of receiving blood in its caliber, at least except by regurgitation from the vena cava. The sides collapse and approach each other; they thus come in contact, and the passage is at last obliterated, as is seen in all tubes of every character as soon as they no longer give passage to the fluid usually passing through them. Yet they still preserve for a long time a free passage, for they may easily be distended by introducing into them any ordinary-sized stylet, while this is not the case with the arteries.

“In the arteries, there is, if I may be allowed the expression, an *active* obliteration; the blood has been forced to abandon them by a succession of organic modifications occurring in the texture of their walls, while, in regard to the umbilical vein and venous duct, there is a *passive* obliteration—that is to say, it follows the absence of the blood; and it is the result, and not the cause of the retropulsion of the sanguineous fluid. The difference, doubtless, depends on the difference of organization between the arterial and venous system. If it be necessary that the foramen ovale and ductus arteriosus should undergo organic changes for their obliteration, it will be easily understood, that nature, so fertile in anomalies, may prepare these modifications either prematurely or tardily; hence the cause of the obliteration of the fetal openings from the first, in some children, and the persistence of the foramen ovale and ductus arteriosus in others, to a period far removed from birth. Hence, also, the necessity of greater or less time in most cases for the completion of this obliteration. In this manner can be explained the irregularities of the period of the complete establishment of the independent circulation, without the necessity of considering them as the cause or effect of certain diseases of the heart or lungs.

“The accomplishment of these phenomena of transition must doubtless be attended with an incomplete oxygenation of blood, since all this fluid which the heart propels to the

different parts of the body has not passed through the lungs. But, after all, is it necessary that the blood of an infant just born should be oxygenated, equally with that which passes through the arteries of an adult? Would it not rather appear that the tender frame of a new-born child ought not to receive blood possessing too much stimulating properties, that the materials of nutrition should not be too suddenly charged with exciting principles, the action of which on the organs of an infant may be injurious to its health, and to the progressive establishment of independent life? I am of this opinion, and do not think its correctness can be denied, flowing, as it does, from the anatomical examination of the circulatory organs of a young child. This assertion is supported by another remark: the lungs would be exposed to fatal congestions if the pulmonary arteries should suddenly throw into them all the blood which flows into the heart. The ductus arteriosus, by permitting the blood to pass through it, comes, as it were, to the aid of the respiratory organs, the congested state of which will not permit the air to arrive freely in the cells; the establishment of independent life is, therefore, actually promoted by the continuance of fetal life. Thus, then, there is a connection between the organization and disposition of parts, and the exercise of their functions, and they follow in a regular order, and by transitions prepared by nature, to the end that no sudden and unexpected change may interrupt the order and harmony of the phenomena of life."

GENUS II. — CYANOPATHY — CYANOSIS —

Blue Disease of Infancy.

We have placed this infantile affection here, rather than in the pulmonary division, because it appears to us as probable that it originates more frequently in some cardiac imperfection, than a pulmonary one; and yet, it may be occasioned by some incompleteness of the respiratory apparatus. Though it may not depend upon the direct communication that exists between the right and left cavities of the heart, yet it is generally thought to be occasioned by some obstacle to the circulation in the right side of the heart.

In this affection the integuments have a blue or violet-blue color, one that very much resembles that which is produced

in adults by several species of asphyxia. So far as we can judge from appearances, the blood has not been properly oxygenated, and therefore, if the lungs should fail to perform their duty, the disease may become manifest without any cardiac malformation. Some think that it may be occasioned by a mixture of the two kinds of blood, but others do not believe that it can result in this way.

We have cyanosis produced, in infants, by an engorgement or an inflammation of the lungs; whatever the remote cause may be, therefore, it seems pretty evident that the proximate one is an unoxygenated condition of the blood; and it will probably be the safest practice to assume it as being generally the fact, that it is produced by a sanguineous congestion of the heart or lungs—and, in practice, the best remedy consists in holding the child near to some source of heat, as a stove or even open fire, and to rub its head and body gently with hot cloths, and this should be persevered in, at the same time keeping the child, when lying, constantly upon its right side.

ORDER II.

INFLAMMATORY FORMS OF DISEASE IN THE CIRCULATORY APPARATUS.

GENUS I.—IMPERFECT CICATRIZATION OF THE UMBILICUS.

The period at which the umbilicus separates, varies from two to fifteen days, but it is usually effected on the fourth or fifth. In a large proportion of cases, the cord is small and the desiccating process is soon completed, and generally without any unpleasant attendants; but in many cases the cord contains a large quantity of gelatinous matter, by which the process of desiccation is retarded; and, in such cases, inflammation and suppuration may supervene—that is, the liability to these results in the latter is greater than in the former.

These results are in nowise essential to the separation of the cord, but are produced, sometimes, by causes of local irritation, and in some cases, no doubt, by some imperfection in the constitution of the cord, at all events, it is made necessary

that we should interfere to prevent mischief, and to effect a perfect cicatrization.

The cicatrization is usually complete in ten or twelve days. If the cord be small and the ring that forms around it be thin, the cicatrix is soon effected; but, on the contrary, if the ring be large and much extended up the cord, the absorption will require time, and the cicatrization will be proportionally delayed. In some cases, after the usual period for the separation of the cord has passed, it will be found still attached by a filament which should be divided, because its existence is an impediment to cicatrization. This process is sometimes retarded by the formation of a sort of mucous membrane at the place of the separation of the cord, which produces a puriform discharge, while the cellular tissue at the same time produces pus. A soft tubercle, more or less red, consisting of the extremities of vessels reunited, forms in the center of the umbilicus, which, when its normal condition is maintained, is finally imbedded in the abdomen. This tubercle sometimes inflames, becomes fungous, and discharges a purulent matter and refuses to heal, but goes on to form an elevated and ulcerating surface, or it may take on the form of a pediculated button or one having a large base.

TREATMENT.—Mayer's Ointment will generally effect a healthy cicatrization; but, in cases where stimulants are required, for the purpose of aiding the granulating process, the Sesquicarbonate of Potassa, or the Sulphate of Zinc, may be previously sprinkled lightly on the umbilicus; care should be taken not to apply too much of either of these agents, lest excessive inflammation should follow, and which must, whenever it occurs, be treated by poultices of Slippery-elm.

GENUS II.—PERICARDITIS—

Inflammation of the Heart's Envelope.

All the symptoms which usually attend this form of disease, in adults, are rarely sufficient to serve as a safe foundation for a diagnosis; if this be the case with adults, how much more obscure must be the symptoms in infants? And, when we contemplate the causes of it, in adults, we are puzzled to surmise a cause for its occurrence in infants.

In the presence of such obscurity, Billard states, "that

when there exists a state of general restlessness, distress, and suffering, in young infants, there is almost always a gelatinous softening of the stomach, pericarditis, or acute pleurisy; and our judgment must be directed to a decision between these three different diseases."

The pulse, which is a marked symptom in the adult, is worthy of no attention in infancy; the child may manifest the existence of pain by its cry, the face may be pinched, the breathing labored, and even suffocating, but these are not diagnostic symptoms.

As the treatment of pericarditis is the same as that of pleurisy, of which we have treated, we dismiss this subject here; and also the further consideration of the diseased conditions of the circulatory apparatus, inasmuch as they offer nothing that is not common to adults except greater obscurity in their symptoms.

In very young children, where every function has but just begun, and when the whole infantile economy is in a crisis, we should naturally expect that a great variety of symptoms would be present, and that these may not always depend on any real pathological state of the system, but merely the effect of one function in modifying the purposes of another; and that, in a few days, the organism will either balance itself, or be totally suspended.

CLASS V.

MANIFESTATIONS OF DISEASE IN THE DERMA.

INTRODUCTION.

BEFORE proceeding to the consideration of the special manifestations of disease in the dermoid system, we desire to indulge in some general remarks upon its structure, functions, and pathology, for the purpose of finding a suitable place to drop a few suggestions, which to us, appear to have a vital bearing on the subject.

Upon the anatomical structure of the skin, anatomists and physiologists are considerably divided in opinion. Chaussir teaches that it consists of two parts, the derma, cutis vera, or true skin, and epidermis or scarf-skin; while Cruikshank maintains that it consists of six laminæ; but the most prevalent opinion is, that it consists of three—the cutis vera, rete mucosum, and the cuticle or scarf-skin; but as the *rete mucosum* has never been demonstrated to exist in the white race, so it is denied to it, by many, while others infer, and we think with just probability, that, inasmuch as it is demonstrated to exist in the negro and some other dark-colored races, it must exist also in the white.

As the rete mucosum is the lamina that imparts the dark color of the dark-colored races, it may reasonably be presumed to be present in all human beings, except the *albino*. It is supposed that the rete mucosum is secreted by the corion or cutis vera. The scarf-skin or cuticle is a translucent inorganic membrane that invests all parts of the body. The cutis vera is supposed to consist almost entirely of a uniform network of minute vessels, some of which, from their exceeding delicacy, transmit only a colorless fluid.

The secretions of the skin are essentially of two kinds—the

sudoriparous or common perspirable matter, and sebiparous or sebaceous matter. The latter is confined to a small extent of surface, such as the point of the nose, the arm-pits, margins of the eye-lids, the pubis, and some other places. These secreted matters are produced by follicles which are about a quarter of an inch deep, and Dr. Willson, from his attention to this subject, concludes that there are in each square inch of surface, two thousand eight hundred of these pores, which, according to the length assigned them, would make a tube seven hundred inches in length. Now, supposing the surface of a man of medium size to be two thousand five hundred square inches, we would have, for the number of the pores, seven millions, and the length of tube one million seven hundred and fifty thousand inches, which is equal to twenty-eight miles. Supposing this calculation to approximate the truth, we can then entertain no doubt as to the importance of the skin as a secretory organ.*

It is difficult to ascertain accurately the quantity of the secreted matter of the skin, but it may be assumed as an approximation of the average quantity that nine parts of solid matter are contained in every hundred secreted; and the greater portion of this consists of a compound of protein, and the balance of chlorides of sodium and potassium, muriate of ammonia, alkaline phosphates, free acetic and butyric acids, and occasionally other salts. To this may be added as an excreted product, the scarf-skin, which is constantly passing off from the surface: it consists of carbon, forty-eight, hydrogen, thirty-nine, nitrogen, seven, and oxygen, eighteen parts. In this extensive elimination of carbon, we perceive that the skin aids, considerably, the respiratory function.

* An importance at least that should place under condemnation of perpetual exile from the profession the physician who would permit his patient to suffer and die, of any form of disease, and more especially of an inflammatory one, without giving the least attention to his cutaneous surface. We have known hearty and sound men to die of pneumonia, and other inflammatory forms of disease, whose skins had not been even moistened during the whole of their illness. Such patients would have recovered without their physicians, — although they belonged to that class of the profession which claims to possess *all the medical skill of the age*. We do not intend to intimate that they killed their patients, but we intimate that if they had shed no blood, and had administered no indigestible medicine, and had cleansed and relaxed the cutaneous surface, they might have recovered.

We have now treated of as many of the cutaneous functions, and as extensively too, as we deem essential to our present pathological purposes.

All dermatologists admit that it is peculiarly difficult to arrive at the etiology of cutaneous disease; but all agree, however, that filthy habits have much to do in its production. Dr. Willan attributed the frequency of it, in England, to the want of public baths; and Dr. Worcester thinks that the same operates to a still greater extent in this country; indeed, he regards it as our most important cause. Now, we are not going to question the possibility, nor even the probability, that a want of cleanliness may produce it, but we deny the importance, in this relation, the preceding gentlemen appear to attach to it.

We are sure that our slave population are less afflicted with this disease than are their more favored and cleanly masters; and if filth can produce it, then some of our Indian tribes should scarcely present an individual exception. They are eternally besmeared with grease, soot, ashes, and paint, and yet we never saw an Indian with a diseased skin. We have, furthermore, seen many negroes whose appearance indicated that they had a hydrophobic dread of water, and yet they had sound skins.

When we find a dog with a diseased skin, he is one which has exercised but little and fed much—it is but rarely seen among the huntsman's dogs. Hogs, than which no animal is more filthy, have very rarely a diseased skin, and when they and dogs have such a disease, we cannot attribute it to filth.

If we are to consider cutaneous inflammation as disease of the skin, as most medical writers have done, if we may infer their pathology from their use of the lancet and purgatives, then of course we would, as they have generally done, look for external causes of it.

We do not wish to be understood as intimating that etiologists have overlooked other and more probable causes, such as indigestible and greasy food, but they have not dwelt upon such causes with the emphasis they merit. They do not appear to attribute as much importance to the pulmonary and digestive surfaces, in the production of cutaneous diseases, as they deserve.

For the purpose of finding a solution to many of the difficulties that attend cutaneous disease, we must again refer to the results of our cerebellar investigations.

In all persons of the first class, we find a native vigor and health in the skin,—a skin in which disease is rarely seen, with the exception of the contagious and erysipelatous—in this class the digestive and pulmonary functions are ably performed, the energy of the former does not permit the production of cutaneous disease, from the ingesta of ordinarily indigestible food, nor does that of the latter allow such a result, from the use of the carbonaceous, such as fat, butter, sugar, etc.

The second class is about as exempt from cutaneous disease as the first, in the absence of any interruption to the general health, because, whatever carbon is taken into the system over and above its demands is converted into fat. This is beautifully illustrated upon the sugar plantations of the south—almost every negro becomes fat during the sugar-making season.

In the third class we have feeble digestive and respiratory functions, and, with them, we have troublesome and even fatal modifications of disease. In this class, indigestible food may not, generally, do anything worse than produce diarrhea, but carbonaceous food, when taken in quantity beyond the wants of the system, must do mischief of some kind—it must act as a foreign irritant. The respiratory powers cannot eliminate it, and those of nutrition cannot convert it into fat; but in the system it cannot remain—the *vis conservatrix* will find an outlet for it, if it have the power, and if it have not, then death ensues.

It is in this class of children that we meet with difficult dentition and all of its associated forms of disease; it is in this class that the arresting of a cutaneous eruption is liable to result in convulsions, paralysis, encephalitis, acute or chronic hydrocephalus, or some other modification of disease; consequently it may ultimately become possible to divide the many forms of dermoid disease into three great classes, depending for their primary or organic causes, upon the three conditions, as set forth in the table above referred to; with the

exception of the contagious ones, and they may be divided into three modifications of character.

These conclusions are so palpable that we feel that we have a right to infer that those cutaneous modifications of disease which do not depend upon a secreted poison, are referable, most generally, to the causes above assigned, more particularly with children, because of that over-feeding and cradle-inactivity in which most mothers indulge them.

But, in this connection, there is another circumstance, connected with children, which is both interesting and important to observe: it is the highly vascular and turgid condition of the cutaneous and mucous systems, which, of themselves, admonish mothers to observe the most thorough temperance and care of their children.

Before we conclude this introduction, a few general remarks upon the subject of diagnosis, treatment, and prognosis seem to be demanded.

As cutaneous forms of disease are always exposed to an open, day-light investigation, it follows, therefore, if that attention which is usually devoted to the diagnosis of other forms, were given to these, a mistake could scarcely ever result, except perhaps in some instances of the complication of one form of disease with that of another, consequently diagnostic mistakes, in these, are less excusable than when they happen in other forms of disease.

Some information can usually be had from those who have been in attendance, and as the introductory stage is usually passed before the physician is called, he may be able in many instances to ascertain whether the eruption commenced dry or moist; and as almost all forms of dermoid disease are successive in their progress, it is generally possible to find an example of its elementary form, as *vesicle*, *papule*, or *pustule*, more particularly in the vicinity of the affected part. When, however, this cannot be done, it may be possible to detect the family of which it is a member, and learn of the attendant or the patient whether the vesicles appeared clear and limpid, or opaque and yellow, and whether the eruptions were distinct or conglomerated, soft or hard, large or small, conical or flattened.

By a proper observance of the foregoing means all the information that may be essential, may generally be had.

Before venturing a few remarks upon the general indications of treatment of cutaneous disease, it becomes proper to observe, that we do not regard cutaneous eruptions, and the attendant fever, as disease, but as (firstly) indices of the existence in the system of a cause of pathological action, and (secondly) as manifestations of well-directed efforts to eliminate it from the system.

Under these views, it is evidently improper to bleed or purge, because these means will reduce the cutaneous inflammation, and thereby cripple the effort the system is making to eradicate the disease. Nor can we, except under the extremest circumstances, reconcile ourselves to the introduction into the system of one poison, for the purpose of removing another. We are aware that Arsenic and the Bichloride of Mercury have much reputation in the cure of various forms of cutaneous disease, but we have been assured by some old and faithful observers, that while they effectually relieve the skin, in many instances, they invariably establish disease in some other part of the system. They are both poisons, and of that kind which cannot, by the power of nutrition, be appropriated to the development or repair of any tissue in the body, consequently, any portion of them which may escape elimination from the system must continue to act as a poison, at least as a foreign irritant, hence we cannot therefore recommend their use, until a more safe and consistent course shall have been thoroughly tried.

The general treatment, then, should consist of alteratives and antispasmodics, with such adjuvants as shall be the best calculated to prevent local and constitutional irritation; such as the mildest aperients, with soothing applications to the surface, which may consist of cataplasms, cleansing washes, and water dressings. These latter means will, in very many cases, alone prove sufficient.

As a very large amount of cutaneous disease is, no doubt, produced by the ingesta of too much carbonaceous food, and whether it is or not, such food should be carefully avoided during the existence of the disease.

Dr. Worcester says, that "Some articles of food, experience

has proved, are particularly to be guarded against; as the use of pork, of all salted meats, all articles of a fatty or oily nature, most articles containing the *nutritious* elements in a very concentrated form, etc., though to this last there are exceptions; in some cases a diet consisting of a large amount of sugar has been efficacious in correcting a depraved and cachectic state of the system.

In regarding sugar as a nutritious article, the doctor is mistaken. Sugar must ever be contra-indicated, in deranged conditions of the derma, except in cases of marasmus, when the calorific function is being supported at the expense of the body.

Cutaneous disease appears, sometimes, to have been established for vicarious purposes, and when we can have any suspicion of this, no attempt should be made to cure it, before the cause for which it was instituted shall have been removed. And when, further, such an eruption has existed so long as to have become naturalized to the system, which not unfrequently happens to youth, as well as old age, a similar precaution is to be observed.

It will not be going too far to say, that the mass of physicians have but little acquaintance with the various forms of dermoid disease; their dermatological nomenclature consists of "tetter-worm, ring-work, nettle-rash, salt-rheum," and perhaps a few other equally vulgar names; and to about the same extent may we consider their knowledge of the subject. In harmony with their nosonomy are their therapeutics: Salts, Sarsaparilla, Sulphur, Arsenic, Corrosive Sublimate, and every variety of salve or ointment. But we doubt very much whether the most learned and highly-approved treatment of them is, really, much more commendable than the preceding.

We are instructed, by Dr. Worcester, to be governed by the great principles that should guide us in the treatment of other forms of disease. This we approve of; and, therefore, it follows, he says, that inasmuch as most forms of cutaneous disease are inflammatory at first, "common sense would direct general depletion by bloodletting and cathartics;" and when this stage has passed off, a resort should be had to "tonics or even stimulants." Now, it so happens that our common sense is deeply penetrated with the conviction that there is no

common sense in this plan of treatment. Our common sense dictates that we should so husband the resources of the patient as to have no occasion for the tonics or the stimulants.

It is evident that he (his school) is aiming to remove or to break down a symptom, and in the accomplishment of it, and then only to a partial extent, he discovers that he has so broken down his patient as to endanger, more or less, his life, and then resorts to "tonics or even stimulants," to insure his safety.

We, on the contrary, at the outset discover that a pathological action is in progress to remove an agent that is unfriendly to health, and therefore we are satisfied to stand by, to remove impediments, and to render aid, as circumstances may require.

A word or two on prognosis, and we close this introduction. When we contemplate the great importance of the cutaneous functions to a continuance of life, notwithstanding the extraordinary power of the system to adapt itself to very severe conditions, it necessarily follows, that when, by a long existence of the disease, great constitutional depravity, neglect, and possibly malpractice, it becomes very generally disorganized, death must ensue, notwithstanding the vicarious aid which is rendered by other parts of the system. When a disease of the skin has existed so long as to become important as a depurating organization, it frequently becomes a difficult question to decide whether any attempt should be made to cure it. When the disease is of a hereditary, or rather organic, character, and has come to perform an important function, it may be wise to decide in the negative, more especially if the patient be on the advanced side of life's meridian. When it performs, vicariously, an important function, as the catamenial, no attempt at a cure should be made, until the function has been restored to its proper organ. It is, however, a question whether the vicarious action would exist, were the disease not present; for certain organs may perform a vicarious act which they would not do were the organs in a healthy or physiological state.

ORDER I.

MALFORMATION AND DISEASE OF THE DERMA PRODUCED BEFORE
OR AT BIRTH.GENUS I.—MALFORMATION OF THE DERMA PRODUCED BEFORE
BIRTH.SPECIES I.—*Alterations of Color.*

Haller has reported cases of white children having been born of black parents, and black children of white parents.

To account for the variety of color in the cutaneous structure of some infants which anatomists have observed, Billard supposes the blood to undergo changes in its composition when circulating toward the integuments. This supposition may, or it may not, be without merit, and the facts attempted to be explained are not of sufficient importance, generally, to justify us in mystifying them by any species of mere speculation. For the present, we must content ourselves with the bare statement of the fact that spots or discolorations are produced in some fetuses.

SPECIES II.—*Excrescences.*

Children have been born covered with hair, and although the circumstance excites considerable astonishment in the minds of the unprofessional, and usually inflicts upon the parents a painful shock, yet the phenomenon is not one that should occasion much concern in anywise. About the middle of gestation the skin of the fetus becomes covered with hair, which, generally, falls off before birth, and at birth shows itself in the liquor amnios.

Existing causes do occasionally produce an extraordinary development, and the action they establish is, in such instances, too energetic to allow of its disappearance before birth. In view of the facts, it amounts to nothing more than an unusually developed and greatly prolonged existence of a normal growth. As this pilous growth will spontaneously disappear, in due season, no remedy is demanded, while depilatory agents, if used, might irritate the skin and possibly do mischief.

The excrescences produced during fetal life, may occur upon any part of the surface of the body, but are most generally met with on the face, hands, and feet, consisting most frequently of an elongation of the skin. It happens that they are so developed, in some instances, as to occasion a real deformity; they should be removed as soon after birth as may be deemed safe and practicable, for the reason that the cicatrix will be more speedily and certainly obliterated.

SPECIES III.—*Nævi Materni*—*Mother's Mark*.

Professor Dewees, Billard, and others ridicule the idea that these productions are caused by impressions made upon the maternal mind during gestation, and yet Billard admits, as every one must, that their cause is "very obscure." Nevertheless, it does appear to us that those who maintain the negative of this question, are much more in the dark than those who occupy the affirmative, and, judging from the medical literature of the day, the advocates of the affirmative are rapidly increasing. If the cases we presented, when treating of this subject, be really facts, and some of them we know to be so, and as to the others we entertain no doubt, it appears to us absolutely impossible to resist an affirmative conclusion.

These *nævi materni* may be divided into three classes: the first comprises those which merely indicate an alteration in the cutaneous pigment, representing clouded yellow, rose, red, livid, blue, brown, copper, or black colors; and, as they continue stationary after birth and through life, we are compelled to infer that there is in them no morbid action—no tendency to disorganization. They are neither more nor less than healthy peculiarities of the skin, and any attempt at their removal will generally do more injury than good, by leaving a cicatrix more disgusting than the *nævus*.

The second class embraces those which are pediculated—having a true erectile tissue, and having for their color some shade of red, with an apparent or real granulated surface.

The third class contains those which are more deeply seated under the skin, irregular in their shape, broad in their bases, and appear to consist of aneurismatic vessels—sometimes called varicose wens, sanguineous fungi, and aneurisms of the small arteries. They differ from true aneurisms inasmuch as

there is no communication between the arteries and the veins.

The last two classes are both liable to enlargement, ulceration, and dangerous hemorrhages, consequently they should be removed as soon as possible, with safety to the child. But how should this be done? Some recommend pressure, some the ligature, some actual cautery, and others the knife; yet very few cases have ever been benefited by either of these means.

TREATMENT.—No treatment is necessary in these disfigurements, unless they manifest a tendency to enlargement, ulceration, or hemorrhage, under which circumstances there is great danger of other and healthy parts becoming involved, which may take place to such an extent as to demand interference.

For the removal of these difficulties, especially after hemorrhage or ulceration has ensued, we employ the pulverized Sulphate of Zinc, applying it over the whole of the affected part once a day; when the part has been covered with the zinc, it must be retained there by a piece of linen covered with paste or some soft, simple ointment. This course should be continued until the whole of the *nævus* is killed, after which a poultice of Slippery-elm must be applied, and changed two or three times a day, until the cauterized portion sloughs off. Mayer's Ointment may then be used to heal the remaining ulcer.

During the application of the zinc, it will often cause so much inflammation, as to render it necessary to discontinue its use for a few days, until the inflammation has subsided from the employment of an elm poultice.

Sometimes it will happen that the ulcer will not heal after the first slight slough has passed off, in which cases it will be requisite to again apply the zinc, and proceed in the treatment as at first.

With this plan of treatment, we have succeeded in curing many cases, even after the actual cautery had failed. From among them we select the following:

A child of Mr. B., aged about ten months, had a mark on the orbital process, just above the nose, and immediately between the superciliary ridges. At birth, it was quite small and very red, and continued to increase in size until it became

nearly as large as a chestnut, presenting a malignant appearance, and involving the surrounding tissue, at which time it was considered necessary by the family physician to remove it, which he attempted to accomplish with ligatures introduced through the tumor by means of needles, and tying it in sections, after which he applied the actual cautery, and burned the tumor to a level with the ligatures. A few days were required for the sloughing to pass off, when it was discovered that the tumor grew more rapidly and assumed a more malignant condition than before—in consequence of which the case was pronounced incurable. Under these circumstances, the parents brought their child to this city to consult Drs. R. S. and O. E. Newton. After an examination, they considered the case, although very malignant, one that could be cured, and Dr. O. E. Newton, taking charge of the case, treated it according to the plan above given, and in a few weeks effected a permanent cure, with but very little disfiguration.

This treatment, so far as we know, has never been pursued by any other practitioners, and we believe it is original with them.

GENUS II.—DISEASE OF THE DERMA PRODUCED BEFORE OR AT BIRTH.

SPECIES I.—*Absence of the Skin.*

It is sometimes the fact that infants, at birth, are destitute of a portion of the skin or common integument, at one or more points of the surface of the body. As to the cause of such injuries we may speculate, and this is, in reality, about as much as we can do.

In the first Book, when treating of the psychological influence of the mother on the fetus (page 40), we introduced one case of lesion of the skin of the knees and muscles of the arms, and another of the skin of the knees which had commenced to cicatrize before birth.

Impressions made upon the mind of the mother may, then, sometimes, be the cause of the absence of the fetal cutis, and of the parts below it. Billard states, that it is generally the case, when the skin is absent, so are the subjacent parts; and that in such cases the borders of the defective skin are red and hardened and considerably adherent to the subjacent parts.

It is thought that the fetal skin may be destroyed at such points as may come in contact with uterine tumors, such, for instance, as polypi; and that it may also be effected by subcutaneous tumors of the child, causing, by their enlargement, an absorption of the cutis.

Whatever may be the cause of such cutaneous disorganization, the treatment will consist of such means as will support the subjacent parts and favor cicatrization.

SPECIES II.—*Tumor of the Scalp.*

Tumors of the scalp, when œdematous, consist of an infiltration of serum, which very rarely becomes of a cone shape, but appears, generally, as a repletion of the cranial integuments, and soon disappears; but when they are sanguineous, they consist of an infiltration into the cellular tissue, or in a repletion of its minute vessels.

Incisions made into the scalp readily give exit to dark-colored blood; in some instances the adipose substance appears to be mixed with drops of blood; sometimes the sanguineous effusion appears between the skin and pericranium, occasioned probably by a rupture of fine vessels. In these cases, the blood is dark and fluid, and so easily absorbed that all the contiguous parts are tinged with a violet color.

Tumors of this kind present much difference as to the period of their duration—extending from one to three weeks. Capuron, says Billard, cautions us against confounding these tumors with encephalocele, as much mischief might result from such an error.

TREATMENT.—The application of stimulants, as cold water, dilute Tincture of Camphor, etc., with slight compression, will generally be found sufficient. In cases of sanguineous infiltration, if extensive, a leech or two may be applied, after which a fomentation of the leaves of St. John's Wort (*Hypericum Perforatum*).

SPECIES III.—*Petechiæ.*

This disease consists of few or many small, round, violet-colored spots, which occur spontaneously in a scorbutic-looking skin. It happens under great prostration of strength; it may therefore be regarded as a debility of the capillary vessels, and

consequently the system is liable to hemorrhages, both inside and out.

The children in which this affection has been seen, were so feeble, appeared so starved and so cadaverous, as to be of no promise even if they had escaped the disease.

In the milder forms of this disease, it may pass through its stages of development and terminate without any serious or troublesome symptoms; but in other cases, very various symptoms supervene, such as hemorrhages from the gums, stomach, intestines, or bladder.

In such cases, *post mortem* examinations have exhibited petechial spots upon the mucous lining of the stomach, small and large intestines, the surface of the heart, pericardium, pleura, bladder, and kidneys. Beside these marks of debility in the vascular system, extravasation and hemorrhage have been seen to attend almost every organ and tissue of the system.

TREATMENT.—In these cases we have derived more benefit from the internal use of the Tincture of Muriate of Iron, than from any other course with which we are acquainted; it should be given in doses suitable to the age of the child, and well diluted with water. The body may be bathed every day or two with a solution of salt in water, and the addition of Capsicum if more stimulant action is required.

SPECIES IV.—*Ecchymosis*.

Ecchymosis consists of a livid, black, or yellow spot, or spots produced by an effusion of blood into the areolar tissue, and, in infants, they are most generally produced by the straits of the pelvis during difficult and protracted labor; consequently the injury is most usually found upon the head, but it may occur to other portions of the body.

But the scalp is liable to this affection from gravitation alone, when confined to the same position for a long time, and in some instances, both causes may conspire to produce it.

Medical treatment is but seldom required in cases of this kind, as they spontaneously disappear by resolution; nevertheless, it would be judicious, as soon as possible after birth,

to bathe the part with water, as hot as it can well be borne. If, after this washing, it should be attended with much swelling, resort may be had to topical remedies, such as the Chloride of Soda or Ammonia.

ORDER II.

MOIST FORMS OF DISEASE IN THE DERMA.

GENUS I.—VESICULÆ.

The varieties of cutaneous inflammation comprised under this head, originally affect the exterior coat of the cutis vera—they are definite and circumscribed, and their eruptions consist of small elevations of the epidermis, filled at first with clear, transparent, and serous fluid, which presently becomes opake and sero-purulent, and, by desiccation, passes into scales or crusts, usually called scabs. We shall notice but two of its species—Herpes and Scabies.

SPECIES I.—*Herpes*.

In herpetic forms of disease, there is always a sensation of burning, itching, and tingling, which is sometimes light or comparatively trifling, and at others great suffering is produced. It shows itself in circumscribed patches, which, at first, are transparent, but soon become opake upon an inflamed surface of a more extensive area; and between the several inflamed surfaces and their vesiculated patches, there exists a healthy skin. It is a non-contagious affection—usually acute in its character, having its vesicles to vary in size from that of a pin's head to that of a pea.

It is not necessarily preceded by, or attended with, a fever, but in all severe cases it is. The period of its duration varies from one to six weeks, but never terminates fatally, unless the constitution is so vicious that it could scarcely recover from disease however simple.

The secretion of its vesicles—passing from limpidity into a milky opacity, forms into scabs which in due time fall off and

leave the skin red. Of this eruption there are several varieties, but the difference between them depends, principally, upon the location and the form of the vesicular patches. When it is most severe, it assumes, to a considerable extent, the appearance of erysipelas, but there attends it this one invariable diagnostic difference—the vesicular clusters are distinct or clearly defined, having the skin that surrounds them of a healthy and natural color.

It more frequently attacks young people than adults, and among the former, those are the most liable who are the most sanguine, or those who are sanguine-lymphatic. Infants, however, are but rarely the subjects of any of its varieties. We shall notice particularly but three of them: Herpes Zoster, Herpes Circinatus, and Herpes Præputialis.

VARIETY I.—*Herpes Zoster—Shingles.*

In this variety the cutaneous eruption always extends around one-half of the body, and it is affirmed by some that it has been known to spread itself entirely around it; but others maintain that it does not. Be the fact as it may, we deem the settlement of the question of no practical importance.

It is, furthermore, affirmed, that it appears more frequently on the right than on the left side of the body—but this question, like the preceding, has been contra-affirmed, and like the other, its settlement can be of no great practical utility. All agree, however, that it never makes an assault without completing half the circuit of the body.

It may commence on one side of the spine and extend itself directly or spirally to the linea-alba; or it may commence at the other extremity and travel in the contrary direction; or it may commence at any intermediate point and extend itself in contrary directions; and, lastly, it may commence at the two extreme points and meet in the middle. When the course of the eruption is spiral or oblique, though commencing on the body, it may begin too high or too low to conclude on the body at the linea-alba, therefore, in such instances, it will conclude on the arm or the thigh.

Each patch or cluster consists of numerous small vesicles which gradually enlarge to two or three lines in diameter, and from their close proximity in the beginning, they not unfre-

quently become confluent. The patches are always distinguished by irregularity of both form and size, but they are usually two or three inches broad, having the greater diameter in the direction of the belt.

These clusters are marked by another irregularity—the vesicles of the several clusters do not appear simultaneously, but succeed each other—that is, some are on the decline before others are fully developed. The limpid contents of the vesicles, in three or four days, become opaque, and in eight or ten days more they cast their scabs. This is only true of the individual vesicles, but not of the whole collectively, for, as they appeared successively, so they must decline, consequently, before the last scabs are cast, twenty or more days will have elapsed.

Like many other cutaneous forms of disease, the eruption of this is generally preceded two or three days by febrile symptoms, as lassitude, general uneasiness, and loathing of food. These symptoms frequently disappear upon the occurrence of the vesicles, but in some they continue as long as the eruption produces constitutional irritation.

Much care should be observed to keep the eruption from being scratched or rubbed off, because of the troublesome sores which are liable to result, more especially as the disease, normally, gives the patient much smarting pain in the skin, and frequently no little of a wandering and shooting character in the body. This affection is sometimes preceded, often attended, and generally followed by a neuralgia under the affected part, and not unfrequently continues for months after every other feature of the morbus has departed.

Notwithstanding the fear that generally prevails as to the danger of this variety of herpes, it is in reality, most generally, mild and by no means dangerous. Some children are so liable to it as to have it almost every year; and yet it is sometimes indicative of remote danger.

VARIETY II.—*Herpes Circinatus*—*Ringworm*.

This eruption usually commences upon the face, neck, arms, or shoulders, in, apparently, a single vesicle, and then others appear around it, and thus it continues to enlarge until it becomes exhausted; but by the time the second or third

addition is fully developed the central vesicles have partially disappeared, and thus, as the outer circles appear, the inner ones disappear, so that in a few days the part occupied by the first vesicle and the circles that succeeded it, become well. In its progress, in consequence of this mode of development, nothing but a circle or ring of small, hard, round, and tense vesicles is seen. In three or four days, the vesicles break, and small scabs are formed, which in about a week are cast. But as they appear in succession, the eruption has an indefinite period to run, but it rarely exceeds a month. As it is but rarely, if ever attended with constitutional symptoms, the only trouble arising from it is the itching it produces.

VARIETY III.—*Herpes Præputialis*.

This is the only other variety of this disease which we shall notice, and we do it only for the purpose of admonishing the student against mistaking it for an eruption of a syphilitic character. As this is a vesicular eruption, it is always distinguishable from a syphilitic one. The occurrence of herpes in clusters, the superficial character of its ulcers, should they supervene, and the absence of that yellowish-white, adhesive discharge, which is characteristic of chancre, will further aid to distinguish the one from the other.

Herpes præputialis may obtain upon the external or internal surface of the prepuce. The vesicles and clusters are very small, and usually run their course in ten days or two weeks. Because of the delicacy of the epithelium, the vesicles are very liable to break, when located on the inner surface, and therefore, without proper attention, they may run into superficial but troublesome ulcers.

CAUSES.—Sudden exposure to cold in a state of perspiration and the direct action of irritants have been named as occasional causes. We admit that they may act as excitants, but as this form of dermoid disease occurs most frequently with those who have much cutaneous inactivity—feeble organs of animal sensibility and muscular motion—it may most generally be suspected of being symptomatic of some more deep-seated form of disease. The existence of pulmonary irritation is sometimes thus manifested—and, though a very trifling form of disease in the abstract, yet it may indicate much danger.

DIAGNOSIS OF HERPES IN GENERAL. — As this eruption has been confounded with erysipelas, pemphigus, scabies, and eczema, it may happen again. In herpes, though the vesicles approach very close, yet they are never confluent, though at a glance they appear so, which, with the hard, globular vesicles, associated on an inflamed base, patches always distinct, with healthy intervening skin, should generally distinguish herpes from all other forms of skin disease.

The rapid development, large size of the bullæ of pemphigus, their scattered, distinct, and irregular character, with the further fact that their development requires but a day or two, should distinguish it from herpes.

The more extensive inflammation, the rapid march, and more deeply-seated development of erysipelas, and the bulb-like character of its blisters, should allow no observer to confound it with herpes.

The locality of scabies, the sulcus of the acarus, its pruritus and contagious character, should distinguish it from herpes.

From eczema, herpes is not so readily distinguished. In the former, however, the eruption arises suddenly, its vesicles are smaller, and at first make their full size, and continue only three or four days, while the disease, in the abstract, is continued indefinitely by elementary eruption, exudation, and excoriation.

The different forms of herpes cannot very easily be confounded with each other, and the light, thin crusts which are characteristic of its varieties, will distinguish it from favus, the scabs of which are thick and friable.

PROGNOSIS.—In the young and comparatively healthy, under at least proper treatment, its termination must be regarded as favorable.

TREATMENT.—In most cases but little treatment is needed. In the young and vigorous, warm drinks and an absence from gross and indigestible food, will be all the constitutional treatment that will be necessary. Should the bowels become so constipated as to occasion irritation, an aperient should be administered.

To allay the itching and smarting that usually attends these maladies, emollient poultices, water-dressings, antispasmodic, alkaline, and mucilaginous washes may be used.

We have a strong suspicion, that in most cutaneous affections there are some renal and pulmonary defects of function, consequently we would never neglect the kidneys—no mischief can attend this practice, even though we be mistaken.

SPECIES II.—*Scabies—Psora—Itch.*

Almost every person, but more particularly those who belong to the lower or less provident classes of society, are practically acquainted with this disease. It locates itself on those parts of the hands, wrists, arms, etc., which are the most delicate, as between and about the roots of the fingers, the middle of the anterior portions of the wrists, and the flexor surface of the fore-arm, and thus it may take possession of all parts of the surface of the body where the cutis is fine and delicate. It is characterized by small, distinct, acuminate, and transparent vesicles, containing a viscous serum.

This eruption is described by some as being at first papular, and then becoming vesicular and scattered, without any particular arrangement, over its selected surfaces. The face and head appear to be the only parts of the surface for which it has no affinity.

This is, perhaps, the only cutaneous eruption that produces the unalloyed sensation of itching, and hence it is alone called the *itch*. The scratching it occasions produces an abrasion of its vesicles which is very apt to convert them into pustules that produce a yellow, viscid matter and much inflammation about their bases. When to that abrasion which attends scratching, is added intemperance, that variety of scabies is produced which is known as the *purulent* or *pocky itch*. The student who is not prepared to anticipate this change, under provoking circumstances, is greatly liable to unfortunate errors of diagnosis.

It is difficult to determine why some individuals are not liable to contract the disease under any possible exposure to it. This is shown by the exemption of many hospital physicians and nurses, who resort to no precautionary means for the purpose of avoiding it.

Stimulating food and potations greatly increase the irritation and itching, and although scratching augments the itching, yet it is said to constitute the greatest luxury that is

known to the catalogue of human enjoyments. The pruritus that attends it is peculiar and intense, and is usually more severe in the evening than in the morning—in young people than in old.

CAUSES.—The infectious character of this disease has never been doubted, and Dr. Wood teaches that it is never produced otherwise. This may be true, but inasmuch as the first case that ever afflicted a human or any other being could not have been occasioned by infection, he is not, certainly, entitled to the conclusion that it cannot be produced by any other cause. The cause that first produced it may still act and occasionally introduce it into communities where infection has not been taken. To be positive, where a possibility to error may exist, is to close the door to further observation.

So far as is now known, this eruption is occasioned by a parasitic insect, called *acarus scabei*, and the communication of the malady is produced by the transplantation of this insect—this has been experimentally proved. It has been asserted that a goat has communicated it to men. Upon those delicate portions of cutaneous surface affected with the disease, investigation will detect a short line or sort of handle appended to an occasional vesicle, in the further extremity of which the insect may be found and captured by the point of a needle. It is a small, white speck, visible to the unaided vision, having the shape of a turtle with eight legs. Its body is so bristled and bearded that it cannot make a retrograde movement when in its sinus under the cuticle.

Improper nourishment, dissipation, and filth are thought to be predisposing causes to it. We have long thought that a proper mode of living would prove an effective prophylaxis.

DIAGNOSIS.—The sulcus, cuniculus, tail, or handle to the vesicle is found in no other disease, consequently, when this can be detected, a certain diagnosis is had—otherwise there is a possibility that it may sometimes be confounded with eczema, but a careful attention to the description of the two forms, respectively, will prevent such a mistake.

As scabies is a moist and vesicular disease, while prurigo is dry and papular, there is but little danger of mistaking either of these for the other. But there are other diagnostics, prurigo is attended by a black scab, which is not the case

in scabies, and this is relieved by scratching, while prurigo is not.

By a careless observer, it is possible that lichen might be confounded with scabies; this attacks the fine and delicate surfaces, but that, the extensor and the more indelicate ones—scabies is, furthermore, moist and vesicular, but lichen is dry and papular. But, in all cases where there is doubt, look carefully for the track of the sinus or sulcus of the acarus, which, if found, removes all doubt.

TREATMENT.—For the cure of this eruption, Sulphur is universally known as an unfailing remedy; but we object to its use, and to all other external agents, until after the skin shall have been cleansed and relaxed, and secretion, in general, established.

M. Helmerich has cured the disease effectually in two or three days, by the following course of treatment: The surface of the entire body, but more particularly of the affected parts, should be first washed well with a strong solution of soft-soap, the patient then placed for fifteen minutes in an alkaline bath, containing a pound of the Carbonate of Potash to twenty gallons of water, at the temperature of ninety-two degrees; the skin is then to be well dried and the following ointment thoroughly rubbed in:

R. Sulphur, ʒij,
Carbonate of Potash, ʒj,
Lard, ʒviii. Mix.

Of seven hundred persons treated at the Hospital St. Louis, in Paris, on a similar plan, but six were not cured, all the rest being cured on the third day.

When great objection exists to the use of Sulphur, the body may be bathed as above, and then rubbed with an ointment composed of:

R. Spirits of Turpentine, ʒj,
Oil of Bitter Almonds, ʒj,
Lard, ʒviii. Mix;

or the following wash may be applied:

R. Sulphuret of Potash, ʒj,
Soft-Soap, ʒij,
Rain Water, ʒviii. Mix.

We have found the use of the Compound Ointment of Zinc,

used externally, with the internal use of Sulphur, fully sufficient to cure the most obstinate cases of itch.

During the use of any of the above remedies, the patient should be carefully guarded against cold, damp air, sudden exposures, etc.

GENUS II.—BULLÆ.

This division differs from the preceding, mostly in the vesicles being, in this case, from the size of a half pea to that of a half egg, and generally of a circular form. The fluid of the vesicles is serous, sero-purulent, or sero-sanguineous; they usually terminate in the formation of a scab, which, among the species, varies much in thickness. We include in it three species—*Pemphigus*, *Erysipelas*, and *Rupia*, though doubting, in some measure the propriety of including the second.

SPECIES I.—*Pemphigus*.

From the information we have been able to obtain concerning this disease, we conclude that it is usually associated with a feeble endowment of the cerebellum, as will be perceived before the conclusion of this history of it. It is characterized by blisters or blebs from the size of a split pea to that of an inch, and these may be disposed of separately or they may become confluent, and in the latter case a single vesicle may become to be two inches in diameter. These blebs contain a serous or sero-purulent fluid, which escapes by the rupture of the cuticle, and dries with it, and forms a thin scab or scale, which is succeeded by a slight ulceration or excoriation, and then gradually disappears.

It appears most generally upon those who possess a delicate skin, and it may appear upon any part of the surface, but most frequently it is confined to the face, neck, and extremities, and apparently founded or located upon erythematous patches.

When it is of a chronic character, in which form it most frequently appears, the blisters do not so readily heal, as above expressed, but continue to form a succession of scabs, which may cause a very considerable protraction of it, and yet, it is very rarely attended by any febrile symptoms.

Its acute or apyretic form is the most common to children at the breast, and it appears in erythematous patches, which

in a few hours, and sometimes almost simultaneously, become covered with blisters. In some instances however, these erythematous patches will not, without some additional irritation, as the application of friction, become bullous; at other times, the center only forms into a blister which can be extended by friction. The blisters, in nowise, differ in appearance from those which are produced by vesicating plasters. The skin that surrounds the blisters is healthy.

The chronic form is the more liable to be attended with febrile symptoms, as fever, thirst, irregular chills, pain in the head and back, but they are usually too inconsiderable to be noticed. It is more painful and troublesome than the other, and is not unfrequently complicated with inflammation of the mucous lining of the bowels.

When the face is assailed, the mouth but rarely escapes, and it is reported, in some rare cases, to have invaded the whole intestinal surface. It is never dangerous, except by its complications, and then it is governed by their character.

CAUSES.—Bullæ is not confined to either sex or to any age, but is more commonly met with in children and the aged. It is not decided as to which sex is the most liable to it. It is said to have been congenital. Those of a debilitated and broken-down constitution, among adults, and children shortly after vaccination are the most frequent subjects of it; but, as in many cases of cutaneous eruptions, it frequently obtains when no cause can be assigned for it.

DIAGNOSIS.—Being a moist eruption, it is readily distinguished from the squamous; from herpes, by its larger blebs and less grouped appearance, it is distinguished. Under the head of *Rupia* we will give the diagnosis between it and this.

PROGNOSIS.—In the acute form, the prognosis is always favorable; and in the chronic, its complications must determine, in the abstract; however it is always more or less important. If the patient have a feeble constitution, and is, at the same time, suffering with other maladies, the prognosis cannot be very favorable.

INDICATIONS.—When inflammation is present, relieve the cutaneous spasm and irritation, promote secretion, and sustain nutrition.

TREATMENT.—Some of our old school brethren inform us,

that when highly inflammatory symptoms obtain, depletion is required by venesection and active purgatives. Why have they not recommended a similar practice in variola?—inflammation frequently runs as high in it as in pemphigus.

When cutaneous constriction has been removed by the use of the warm lye-bath, with internal diaphoretics, our chief reliance then must be placed upon renal depuration, more particularly if the affection be connected with anasarca, which is not unfrequently the case.

The bowels should not be disturbed, unless their contents are producing irritation, and even then purgatives are not required, but demulcent enemias will be found more beneficial.

The blebs may be opened and their contents discharged, but much care will be required to save the inflamed surfaces from abrasion.

As an absorbent, some desiccating powder may be sprinkled upon the blebs. For this purpose, dry, powdered Elm-bark, Flour, Chalk, powdered Hydrastis Canadensis, etc., may be used.

Dr. Willson teaches, that “When there is reason to believe that the eruption is an effort on the part of nature to determine to the surface a morbid disposition, I should strongly recommend the employment of Mustard-baths to the whole surface of the skin, or a stimulating liniment of some kind, such as that of Croton Oil, in the proportion of a drachm to an ounce of Olive Oil, to be well rubbed into the sound parts of the skin.”

We object seriously to his philosophy, but not to his practice—we approve of it; but we would like to know in which form it is, of eruptive disease, in which nature does not make an effort to determine to the surface? So far as we have yet learned, this is her purpose in all forms of disease, and our duty is to aid her in effecting her object, and not to defeat her by bleeding and purging away that vital force by which alone we can hope for success.

SPECIES II.—*Erysipelas*.

This disease usually makes its attack upon infants within a few days after birth, or at least within a month, and some have thought that it never occurred beyond this period, but

others affirm that they have known it to appear as late as one year, but such cases must be exceedingly rare.

The inferior portions of the body, as the nates, groins, and umbilicus, are the most usual points of attack, in infants, and it introduces itself in the form of a small, red blotch, from which it irregularly, but gradually, extends itself over the abdomen and along the back and inside of the thighs—wearing a diffused and inflammatory appearance, of a purplish hue, tumefied, resisting, and painful under pressure. It is common for large, but thinly-distributed vesicles to appear toward the close of the first day, with livid and inflamed bases, or they may not appear under several days, or in mild cases they may not appear at all.

When the vesicles quickly succeed the inflammation, they usually become extended with much rapidity, and with equal speed, assume a dangerous appearance. The tendency to gangrene, in its violent forms, is so considerable that it should always be anticipated.

When the invasion has been made upon the inferior extremities, the most probable termination will be ulcerative suppuration of the subcutaneous cellular tissue; but when made upon the abdomen, we are scarcely permitted to expect any other sequent than sphacelation.

When the suppurative process assails the cellular tissue, its course, in infancy, is very much as it is in the adult—it will not be arrested so long as there is contiguous tissue to prey upon, if life shall be so long continued.

Visitations of mild forms of this morbus are very rare, and in relation to the duration and violence of its other forms, but little can be said with certainty. In some instances, though not particularly violent, it is greatly procrastinated by its peregrinations. It will travel and invade almost every part of the surface, and in the rapidity of its movements, it frequently leaves every part sound, except its last and final abiding-place. Its travels and invasions, however, are not always, nor even generally, consecutive, but, like Bonaparte's campaigns—when it leaves a part, there is no predicting where it will next appear.

In infancy, the splanchnic system usually betrays considerable derangement, as frequent alvine evacuations, with griping and

a grass-green color. In other cases, a reversed condition of the bowels obtains, with colicky pains and acid ejections from the stomach. The urine has usually a bilious, and the skin a jaundiced, color.

CAUSES.—These are acknowledged to be particularly obscure. Our observations induce us to believe, that, in adult patients, it depends upon a special organic liability, indicated by a thin and delicate skin, a large organ of animal sensibility, and of course a tolerably full habit of person. But the liability of erysipelas neonatorum to a sphacelous termination, induces us to suspect that the same organic conditions do not obtain, and yet they may, but modified by some peculiar infantile condition.

The cause is sometimes attributed to a derangement of the chylopoetic viscera, and it is true that such derangement is manifested through the course of the disease, but whether it is a cause, or merely a sequent, is not certainly known.

Meckel, by *post mortem* examination, discovered, in one case of an infant, the umbilical vein and a surrounding portion of the peritoneum to be much inflamed, and several similar cases have since been observed, and hence some have been disposed to attribute this disease in infants to this cause, supposing some injury to have been inflicted on the umbilical vein at birth.

If those organic conditions obtain in infancy, which we hold to constitute a *sine qua non* in this disease in adults, then we are satisfied that a cause which is adequate to the production of coryza, is capable of developing erysipelas.

DIAGNOSIS.—A deep-seated inflammation of the skin, a disposition to spread, symptoms of dangerous fever, and tumefaction of the inflamed parts, may be regarded as the leading diagnostic features of erysipelas. In erythema, the inflammation is superficial, with a very trifling tumefaction. The partial location and uniform redness will distinguish it from the exanthematous. In erysipelas phlegmonodes there is no disposition to travel, the tumefaction is greater and all the local symptoms are more violent.

PROGNOSIS.—The prognosis in this affection may, in a great measure, be inferred from its history. In a mild form and a sound constitution, it is of little consequence; but, under a

contrary combination, it must be considered as particularly dangerous, from the great probability that it will occasion purulent deposits in the viscera, and establish inflammation in the lymphatic vessels and superficial veins. It is also dangerous from its metastatic tendency, and it is particularly dangerous when complicated with purging and vomiting.

INDICATIONS.—Relax and cleanse the surface, maintain its centrifugal action—guard against repulsion, equalize the circulation, and sustain the vital tone of the system.

TREATMENT. — To cleanse and relax the surface should be the first object of the practitioner in this disease, and afterward to maintain the relaxation and to effect and sustain a determination to the surface, by means of diaphoretics; for which purpose the Compound Powder of Opium and Ipecacuanha will be found very beneficial.

The bowels should be maintained in an aperient condition, but active purgation should be as thoroughly guarded against as in the treatment of small-pox. The Compound Powder of Rhubarb and Potassa will be found the most useful aperient that can be given.

To absorb the matter as discharged, powdered Starch should be sprinkled over the discharging surfaces; as, if the least danger is apprehended from mortification, a saturated solution of Sulphate of Zinc may be applied until the vesicated parts become white, after which apply an Elm poultice, and continue it until the inflammation subsides, and the white eschar sloughs off.

In case of much tumefaction in any part, it should be poulticed with bread-and-milk, Slippery-Elm, or with what we regard as much better in this form of disease, a decoction of some vegetable astringent, as the White-Oak bark and corn meal; yet our principal reliance in the treatment of this disease is the internal use of the Tincture of Muriate of Iron, which may be given to a child two or three years old in doses of three or four drops well diluted with water, every three or four hours, and the affected parts bathed freely with the tincture.

Should the patient become much prostrated, either because of its original debility (which is not usually probable), or

because of the violence of the disease, tonics and stimulants should be prescribed; as,

R. Pulv. Hydrastis Canadensis, ʒiij,
Port Wine, octj.

Of this, a teaspoonful may be given three or four times a day to a child two or three years old, or in proportion.

Authors very generally proscribe animal food under such circumstances as the present, but upon what just principle we cannot determine. We regard carbonaceous food, whether animal or vegetable, as objectionable, but we cannot come to the same conclusion with regard to animal muscle, in the abstract. It is already adapted to the nourishment of the human body, and for this purpose produces less irritation than almost any other kind of food. When the muscle cannot be taken, a tea of it can. If the stomach be in a secretory condition, fresh muscle will be the best generally, and if not, salted flesh will prove very palatable, and so will pickles. In this form of disease, the appetite of the patient may very generally be trusted.

SPECIES III.—*Rupia*.

This affection, most generally, is found among the poor, the destitute, the ill-fed, and those possessing naturally a feeble vital system. It appears most frequently upon the loins, nates, and legs, and when of a mild character, it occurs, without inflammation, in blisters or bullæ, from a line or two to an inch or more in diameter, which contain a transparent fluid that finally becomes opaque, sero-purulent, purulent, or sanious, rarely appearing well concocted, often almost black, with a tendency to a rapid formation of scabs, which are generally of a dark-brown or even black color, and more developed or thick at their centers than at their margins. When the scabs are detached, which is easily done, they exhibit ulcerated surfaces, which may cicatrize, or successively, for many times, form new scabs, depending very much upon the more or less depraved condition of the system; but finally, they heal, leaving the new skin of a livid redness, which continues frequently for a considerable time.

That variety of rupia which most frequently assails infants, is of a more inveterate character—the blisters appear upon

previously-inflamed surfaces and contain a dark opaque fluid. At first the bullæ are small, but they gradually enlarge in breadth and depth, with inflamed borders, and finally eventuate in ulcers which produce an offensive, excoriating, sanious pus, accompanied with pain, fever, restlessness, and sleeplessness.

In a majority of instances, where scabs become detached, they are successively reproduced, and thus the disease becomes protracted for two weeks or more, when it may or may not destroy its victim.

CAUSES.—Beside those constitutional conditions with which we commenced this article, we may add, that in children it sometimes succeeds to the eruptive fevers, as scarlatina, rubeola, but more particularly variola. It has been contended that it is always a sequel of syphilis, but the unfounded character of this notion has been thoroughly shown. It is said to be frequently complicated with other forms of cutaneous disease, as scabies, pemphigus, and ecthyma.

DIAGNOSIS.—Rupia bears much resemblance to pemphigus and ecthyma. But the globular bullæ and the thin, delicate, brown scab or crust of pemphigus, will distinguish it from the flattened bullæ and the thick, rugose, oyster-like, conical scabs of rupia.

The elementary form in ecthyma is pustular, while that of rupia is vesicular and bullous. Although the elements of these two forms of disease are very decidedly unlike, yet it is sometimes difficult to distinguish the one from the other. The very obstinate character of the ulcer, in rupia, may serve to aid the diagnosis. The best chance to arrive at a diagnosis is a close investigation of a new pustule or vesicle, as the case may be—one producing pus, and the other serum.

PROGNOSIS.—In giving the natural history of this affection, we said enough to authorize an inference as to the prognosis. When the constitution has a viable appearance, the disease is of a mild form, the conclusion may be favorable; but, under contrary conditions, unfavorable.

INDICATIONS AND TREATMENT.—The most important indication is to improve the general health; the next consists in removing all causes of irritation, particularly such as may

have had an agency in the production of the disease; and, lastly, to keep the surface and the eruption clean.

The first indication may be answered by a generous and nourishing diet, and such tonic medicines as Hydrastin, Quinia, Iron, Ptelein, etc.

The next indication will require a comfortable chamber, a pure atmosphere, and a proper attention to all the depurating apparatuses, especially the kidneys and skin, and which indication may be fulfilled by the use of diuretics and an alkaline bath two or three times a week.

The bullæ should be punctured early and dressed with dry lint and a bandage, or if the strength is sufficiently reactive, water dressings may be substituted.

If the general condition of the system is too depraved to admit of improvement under the above treatment, such stimulating applications should be made as will excite the ulcers to a more healthy action, such as the Compound Ointment of Zinc. In the meantime the most perfect rest should be required.

GENUS III.—PUSTULE.

Pustulous forms of disease are those which are attended with an elevation of the cuticle, upon an inflamed base, containing pus. Pustules are of various sizes, but the largest rarely exceed two lines. Pustulous disease, whatever may be its character in other respects, usually terminates either by absorption, by the formation of pus, by ulceration, or it may pass, by a process of degeneration, into a tubercular disease. Upon healing, it may or may not leave permanent cicatrices.

In this genus, we include four species: Variola, Ecthyma, Impetigo, and Porigo.

SPECIES I.—*Variola*—*Small-Pox*.

This form of disease is sporadic and epidemic, and consists in an acute inflammation of the cutaneous investment of the body, attended with fever and an eruption of red points, which pass, in rapid succession, from papules to vesicles, and then into pustules, which very generally attain their maturity between six and nine days, and then, by desiccation, pass into scabs, which lose their attachment between the fifteenth and

twenty-fifth day, from the commencement of the initial form, leaving upon the skin irregular pits and permanent cicatrices. It invades, very seriously, the mucous membranes, particularly that of the lungs, producing congestion of their surface, and not unfrequently pustules.

The course of variola is divisible into five pretty distinctly-marked periods, which are those of incubation, invasion, eruption, suppuration, and desiccation.

1st. *The period of incubation* comprises that time which elapses between the reception of the poison and the beginning of its consequent manifestation, which is usually between nine and twelve days, but sometimes it is procrastinated to twenty days, and in some instances even longer.

2d. *The period of invasion* is attended with symptoms that indicate a serious constitutional invasion, such as languor, lassitude, pains in the bones, chilliness, headache, and finally fever. The last symptom, fever, is usually preceded or immediately succeeded by nausea and vomiting, in some instances it even happens that these symptoms constitute the first announcement of the morbid invasion.

Attending these symptoms, there is usually thirst and more or less of obstinate constipation. In this condition of the system, there is generally some pain of a colicky character in the epigastric or umbilical regions, with much redness of the edges and point of the tongue. A characteristic symptom of this stage is pain in the loins, and it generally commences on the third day.

It is not possible scarcely to ascertain the presence of chilliness or headache in children; but the fever, which varies greatly in degree, may always be ascertained by the dryness and heat of the skin. The existence of cerebral symptoms is indicated by restlessness and irritability, delirium, somnolence, and convulsions.

The preceding symptoms are usually present from the commencement of the eruption, which is between the second and seventh day, but most generally about the third, and the more severe the disease is, the earlier it appears. The confluent form is more severe than the discreet—usually attended with more sickness and vomiting and a sense of exceeding prostration. At the close of the invasion, which most commonly

happens between the second and fourth day, the eruption appears, and with it may be expected an abatement of the febrile symptoms. It is proper to add, that throughout all the periods there is an exacerbation of the fever during the night.

3d. *The eruptive period* is generally introduced by an exacerbation of all the constitutional symptoms, as languor, lassitude, nausea, oppression, and cough, but the moment the eruption appears they are all relieved—comfort is comparatively produced. The eruption usually appears first on the lips and forehead, thence upon the face, thence upon the neck and arms, and finally, it travels downward to an investment of the whole surface, and all this in the brief space of twenty-four hours.

As we before remarked, the eruption begins in small, red points of a conical form, quite resisting, and disseminated in proportion to the pustules which are to be developed. In the simple or discreet variety, they are few and distinct; in that form known as the coherent, they are numerous and clustered together in patches; when the eruption is confluent, they are closely aggregated and so numerous as to occasion a general redness of the surface; they gradually increase in size and prominence for one, two, or three days, and as a general fact, the eruption on the second day passes into the vesicular form, and this change begins and follows the order of papular development. At first, the vesicles are smaller than the papules and acuminate in shape, but they grow larger, become flattened, sunken in the center, and so enlarged as to cover the whole papule and even exceed it in size.

In the course of these changes, the vesicular fluid passes from transparency to opalescence, and finally the vesicles are converted into pustules, and this change introduces the fourth stage, which happens usually between the fourth and sixth day of the eruption.

The vesicles are surrounded by small, inflamed areolæ during the various changes, which differ in appearance in accordance with the greater or less approximation of the vesicles. In the distinct form, the areolæ fade gradually into the natural color of the skin; but when the pocks are close together, or apparently run into each other, the inter-pock spaces are more

or less of a bright color; and as the pocks approach to confluence, the areolæ become imperfect.

4th. *The period of suppuration* is introduced by an enlargement of the vesicles, and the conversion of their contents into pus. As they arrive at maturation, they gradually lose their umbilical shape and become convex on their surface. The same law is observed in the development of the pustules that obtained with the papules and vesicles, beginning on the face and progressing to the extremities. The areolæ consequent upon the vesicular stage, continues through the early part of the pustular, but they assume a purple tint as they decline.

Upon seeing a case in the papular stage, and then again in the pustular, no one could realize the fact that there existed no more pustules, until he reflected that the papules were mere points, having much space between them, but that in their passage to pustules they had so much enlarged as to apparently cover the surface. The pocks are the most numerous on the face, and the number decreases, proportionally to the size of the space, as they descend; so true is this, that when confluent on the face, they are distinct on the thorax and abdomen.

Upon the mucous membranes, the disease becomes evident by a vivid redness, which is succeeded by papular elevations, but whether they are papular or vesicular has not been clearly determined; but they appear simultaneously with those of the skin, particularly in the mouth, nasal passages, fauces, eyelids, and sometimes the vulva. These papular elevations, if such they be, assume the appearance of small, whitish, rounded, pseudo-membranous points, which, commencing on the second or third day, continue about five days, and then become detached, leaving, most commonly, a little ulceration or erosion, which recovers without an apparent cicatrix.

A true inflammation of the mucous membrane of the mouth and throat takes place in a short time after the appearance of the pustules; the gums become swelled, red, and spongy, and dotted over with white, pseudo-membranous and rounded points, when inflamed.

The same white points, with redness and injection of the membrane, are sometimes present upon the velum pendulum

and the tongue, but with the latter they are much more rare. There is partial or general inflammation, in most cases, of the pharynx, and it is to be noted that it occurs subsequently to the formation of the variolous pustules, which is denoted by sore throat, more or less severe, and difficulty of swallowing, with tumefaction and soreness of the sub-maxillary glands. It often, perhaps generally, happens that there is pain in the larynx when assailed by the mucous eruption, and the voice becomes hoarse and whispering, with a hoarse, smothered, laryngeal cough. This pharyngo-laryngitis occurs usually between the third and sixth days of the eruption, and from the eighth to the thirteenth ceases. Sometimes it does not supervene, or if it do, it is very slight.

The subcutaneous tissue becomes more or less inflamed during the variolous eruption, the intensity of which is determined by the extent of the eruption. The skin, more or less hot and painful, becomes red, tense, shining, and elastic in its resistance. Tumefaction supervenes on the fourth or fifth day of the eruption, and progresses for five or six, producing much pain, stiffness, and inconvenience. As desiccation progresses, the swelling subsides, and, in this feature of the disease, the face is always the most afflicted—the eyes becoming sometimes entirely closed by the facial tumefaction.

■ We have observed, in another place, that when the papules are fully thrown out, the fever subsides, or disappears, and now, we add, the pulse falls, possibly from one hundred and forty beats to seventy-four, and that throughout the vesicular period the child is clear of fever; but about the fifth or sixth day of the eruption, when the process of maturation is nearly completed, a new fever, technically called *secondary fever*, announces its appearance by a pulse ranging from eighty-eight to one hundred and forty beats, strong, hard, full—and attended by a hot and dry skin. It continues to the ninth or eleventh day, or until the desiccating process is nearly completed on the face, having continued between four and six days. That condition of the system which obtains in the suppurative stage is evidently the cause of this fever.

As, in a great measure characteristic of variola, the patient exhales a peculiar, fetid, disagreeable odor when the pustules begin to break and discharge their contents.

5th. *The period of desiccation* is indicated by a diminution of the tumefaction and a desiccation of the discharged pus and purulent matter, which had previously accumulated, by their conversion into scabs. This process, like all the preceding ones, takes place at first on the face, which happens usually on the eighth day of the eruption. The desiccating process is not the same in all cases; a dark point is formed in the center, in some instances, which gradually extends and forms the whole pustule into a hard crust; in other cases, the whole surface dries at the same time; and lastly, the pustule, in many instances, gives way, allowing its contents to escape, which then hardens into irregular yellow crusts, that become brown before detached. It is not uncommon on the arms and legs, for the pustular fluid to be absorbed, leaving the epidermis to be removed by desquamation.

The falling of the crusts begins, usually, between the eleventh and sixteenth day, and terminates between the nineteenth and fortieth, but most generally before the twenty-fifth, of the eruption.

Upon the detachment of the scabs, the derma presents, in different cases, very different appearances. In some, a true ulceration and loss of substance of the derma has been effected, and when desquamation occurs early in the disease, it presents all the indications of a suppurating ulcer. When desquamation obtains at an earlier period, the ulcer is discovered to be dry and cicatrized. In both instances, the cicatrices form little pits which continue during life. In other instances, the detachment of the scabs leaves the derma red and excoriated, without pits, which, upon drying, leaves reddish-brown blotches that continue for months, and finally pass off without leaving cicatrices. And finally, in other instances, the cicatrices are completed before the scabs become detached, and when they do fall nothing is observed but reddish spots, having a furfuraceous exfoliation of the cuticle; the whole process finally terminates without leaving cicatrices.

With some general remarks, and we close our history of the variolous symptoms or manifestations.

It should be constantly remembered, that constipation is almost as uniformly present in variola as are the pustules, and when we come to the treatment, it will be seen that it is

indispensable to a successful development of the eruption. When diarrhea supervenes, therefore, it is to be dreaded—to be regarded as of bad import, more especially when severe. Abdominal distension is not a common symptom in this disease, and yet it does sometimes occur, to a moderate extent, and attended with some pain in the epigastrium, or in the umbilical or iliac regions; if, however, it should be seen, some unfavorable complication may be suspected.

From the preceding history, it might be inferred that children would sink very much under an attack of variola, but such is not usually the case, except in dangerous cases, which are usually either confluent or irregular. From the great liability of children to cerebral disturbances, it might be supposed that the greatest danger should be looked for in that direction, but in regular variola this is not the case; yet such disturbances do occur, but they are usually light

COMPLICATIONS OF VARIOLA.

Under this head, we shall make a few extracts from Dr. Wilson, “On Diseases of the Skin:”

“Hitherto the favorable course only of variola has been described, but the disease is not unfrequently attended with *complications*, which give it the character of a dangerous and often fatal disorder. These complications may occur during any one of the five periods into which the progress of the affection has been divided.

“Instead of pursuing the mild” and uncomplicated course, “the period of invasion is occasionally marked by symptoms of excessive severity, the accompanying fever runs high, and the rigor which precedes it has been long and enduring, and the pains in the head, the chest, the præcordia, and the loins, are so violent as to lead to the suspicion of inflammation of the organs situated in those regions. There are sometimes delirium and coma, at other times convulsions, and death may occur before the eruptive stage is established.

“The period of eruption, like the preceding, is liable to its accidents; serious congestions of one or more of the internal viscera may ensue. Sometimes the congestion is directed upon the brain and spinal cord, producing twitching of muscles, restlessness, convulsions, or coma; sometimes on the

lungs, causing bronchitis, pneumonia, or pleurisy; sometimes on the mucous membrane of the alimentary canal, giving rise to diarrhea, dysentery, or hemorrhage; and sometimes upon other of the abdominal organs. In cachectic diathesis, passive hemorrhages and petechiæ may accompany this period; and under any of the complications, the case may prove fatal before the completion of the eruption. The variolous vesicles, instead of progressing, become stationary and flaccid, or distended with a sanguinolent or serous fluid.

“The period of suppuration, as it is most severe in its symptoms, is also the most dangerous in its complications, and the most frequently fatal in its effects. Alarming symptoms sometimes appear with astonishing rapidity, and destroy life in a few hours, or even in a shorter period. Affections of the brain, of the larynx, and of the trachea, are most to be apprehended during this period. When these secondary affections are severe, the pustules remain stationary, or become flaccid, or are converted into sanguinolent bullæ; sometimes they are accompanied by petechiæ and passive hemorrhages, and in rare cases disappear by the absorption of their purulent contents. The latter occurrence is always fatal.”

The termination of variola is a period of much anxiety; for when the disorder has run favorably through its stages, and the danger of the disease has apparently passed away, the secondary affections are not uncommonly developed, as consequences of the variolous inflammation; such are chronic inflammation of the various mucous membranes, producing deafness, ophthalmia, opacity of the cornea, staphyloma, œdema glottidis, hemoptysis, pulmonary tubercles, chronic diarrhea, chronic bronchitis, pneumonia, pleuritis, empyema, glandular enlargements, caries of the bones of the face, subcutaneous abscesses, erysipelas, gangrene of the skin, disease of the joints, etc.

ANATOMY OF THE VARIOLOUS POCK.—A knowledge of the structure of variolous pock may not be of any great practical importance, but it must be considered as peculiarly interesting.

A little limpid serum, of an alkaline quality, is found in the vesicle when opened shortly after its formation; when removed the skin is found to be red, moist, and soft. A filiform

adhesion is discovered to exist between the center of the pock and the surface of the derma, which creates its umbilical peculiarity. When the pustule becomes globose, it is in consequence of a rupture of the filiform adhesion. Very soon after the vesicles become pustules, a false membrane is discoverable in the pock, of an opaque and white color, soft and friable in its texture, and resting upon the derma in small and isolated points. These points enlarge, unite, and thus constitute a pseudo-membranous disc, after the lapse of a little time, which is of an uneven surface, and fills the pock, or is covered with serosity and finally with pus. In the progress of the pustule it forms an adhesion to the surface of the epidermis, and afterward becomes detached, and continues free in the pustule and enveloped in its contents.

DIAGNOSIS.—As this disease, when developed, can be mistaken for no other, the only diagnostic desire that can exist is the means of recognizing its character during its prodromic stage, which cannot certainly be done. But if the disease prevail as an epidemic, or if it be known that the patient has been exposed to its contagion, without having been previously vaccinated, then the concurrence of fever, constipation, bilious vomiting, and pains in the back, should be regarded as strongly indicative of its initial existence.

CAUSES.—With the exception of a few individuals who are idiosyncratically insusceptible to its invasion, neither sex nor age is exempt from small-pox—not even the fetus. The profession are quite unanimous in the conviction that its cause is a specific animal poison—probably an elaboration of an abnormal secretory apparatus. It may occur sporadically and epidemically. Most generally one assault of the disease destroys the susceptibility to a second; but instances have been noted of some persons having had it six times. After the first attack, its invasions are comparatively mild, and yet to this rule strong and marked exceptions have been observed. The suppurative stage is regarded as being most capable of producing the contagion. When it is epidemic, the virus is transmitted by the prevailing winds.

When we contemplate the variety of the variolous affections, and the fact, that one form is no preventive against another—even the most malignant is no protection against

the milder, we are induced to suspect that it may, primarily, originate in a purely atmospherical condition.

PROGNOSIS.—The simple or discreet small-pox may be regarded as never dangerous, and the same remark is applicable to the confluent variety, when uncomplicated. Rilliet and Barthez confirm this opinion; they state that all the cases they saw, recovered, when not complicated. The complication, then, of small-pox, must be attributed, in most cases, to some fault or infirmity of the constitution, or to injudicious treatment.

When severe nervous symptoms occur during the first stage—a continuance of the fever after the eruption has appeared—an irregular appearance of the eruption—high sensorial irritation during the secondary fever, or any other departure from the general character of the disease, may be regarded as indicating some complication, and the variety and number of these we have elsewhere indicated.

INDICATIONS.—Maintain the centrifugal action, reduce the spasm and irritation of the surface, remove all causes of irritation, and guard against repulsion.

TREATMENT.—Dr. Gregory says that small-pox “is a fever which *relieves itself* by superficial eruption.” If fever be the disease, how does it happen that it returns after the eruption is upon the surface? If the physician will regard the fever as indicating an effort of the system to cast the disease upon the surface which was produced by the poison, he will have a much more accurate idea of his duty.

He says, further, that “Heroic remedies are here wholly inapplicable, and the great object of art is simply to place the system under the most favorable circumstances for effecting what the old physicians called the concoction and elimination of the morbid humors.”

If he had made these remarks in his introduction, and had intended them for a universal rule, to be strictly observed in the treatment of all diseased manifestations, we would readily have conceded that he had a clear and intelligent view of his subject; but under existing circumstances he has thrown them out as expressive of a fact that is applicable to small-pox, and for reasons which he does not understand, as may be clearly

inferred from his remark, that "*heroic* remedies are *here* wholly inapplicable."

If heroic disease indicates the use of heroic remedies, then they are as applicable to some modifications of small-pox as to pneumonia, bilious fever, broken bones, etc. The only difference is this: the consequences of his *heroic* remedies, in small-pox, are easily perceived, which is not the case with many other forms of disease.

Dr. Wilson says, that "Meddling in variola is calculated to be as injurious as in other eruptive diseases depending for their origin on a specific poison;" but why is "meddling in variola" more reprehensible than in other equally dangerous forms of disease?

He says, again: "It must be borne in mind, that any vascular determination to the surface, whether internal or external, will be followed by an increase in the number of pustules developed on the irritated spot;" but this increase of pustules can do no mischief, provided they are produced upon the external surface.

He continues: "Thus an incautious purgative, at the outset of the fever, may induce so great a congestion of the mucous membrane of the alimentary canal, as may terminate very seriously."

This remark is judicious, but it is empirical, because he does not explain why purgatives are demanded in fractured bones and gun-shot wounds, and not in small-pox. Inflammation is only inflammation, no matter where located—it is one and the same, and so are the general indications of treatment.

Although Dr. Gregory has stated that small-pox is not the place for the use of *heroic* remedies, yet he teaches, that when the fever is violent in the initial stage, or even later in the disease, we should have recourse to general bleeding and the use of purgatives every day. Is not this heroic treatment? During the period of pustulation, under indications of much debility, he advises the use of nutritious diet, wine, brandy, Carbonate of Ammonia, and Quinine. Now, is it not very probable that the exhausting practice, in the former stage, made the use of stimulants requisite in the latter? Suppose

that the vital force, which was destroyed by bleeding and purging, was now present, is it not very probable that the stimulants would not have been indicated? Would it not be far more wise and judicious to husband the vital force, in the early stages, to aid or sustain the system in the exhausting? Does not such a practice indicate a most glaring inconsistency?

In the incipient or forming stage, the patient should be placed on a mattress bed in a room of comfortable temperature, by no means too warm, and then should be treated thoroughly with the alkaline wash and rather stimulating drinks and enemata of the same. We mean that this treatment shall be used at the time that pains in the back and head are complained of. This course should be persevered in until the eruption shall make its appearance on the surface. These drinks and enemata may consist of an infusion of Virginia Snakeroot and English Saffron.

When the objects above specified shall have been obtained, the same course may be continued, but abated or diminished, as barely to keep the eruption upon the surface; or, in other words, to such an extent as may be found necessary to keep the pustules red and full at their bases. When these conditions of them are not maintained, the physician may feel assured that his patient is not doing well; hence his observation should be constantly directed to them.

If, notwithstanding this vigilance, he should discover the pustules turn pale and more or less flattened, he should resort again to the previous treatment, taking care not to excite too much action upon the bowels—in this respect nothing more than an irritating constipation is to be avoided. In feeble constitutions a comparatively moderate catharsis may produce a fatal centripetal action.

If the above treatment should fail, or even tardily reproduce the centrifugal action; that is, return the pustules to the surface, an emetic, as the Acetous Emetic should be administered. The constitution must be too feeble to contend successfully with the disease when hot alkaline bathing, stimulating drinks, and emetics cannot reproduce the eruption upon the surface; should this be the case, however, warm, stimulating drinks may be given, as wine whey, gin sling, brandy

punch, or still better, the Compound Tincture of Virginia Snakeroot.

The chamber should be kept thoroughly ventilated, the patient's linen and bed should be kept clean, he should be kept quiet, and prevented from scratching or picking the scabs, and his chamber should be frequently purified with the chloride of lime, or with alkaline or soap washings.

During the filling and maturing of the pustules, the patient may drink water and thin gruel, and, as food, the least irritating and most nourishing is a tea made by boiling fresh beef, without any of the suet or fat, which may be seasoned to suit the appetite; this may be used, together with guava jelly, apple sauce, and juice of orange, which are generally preferred by the patients.

Much has been said as to the best means of preventing the formation of pits by the desiccation of the pustules. We are acquainted with an excellent practitioner who opens the pustules and cleanses them by alkaline washes, and then covers the face with a delicate oil-cloth. We have not witnessed the results of this practice, but he represents it as the best he has tried. This practice of cleansing the pustules, we believe, originated with the Persians, and we think favorably of it, as a probable means of lessening the secondary fever, by preventing the absorption of pus.

It is recommended by others, to keep the face, as far as practicable, covered with some bland poultice, or even a wet cloth, for the purpose above-named, and to absorb the pus.

Various means have been tried to effect an absorption of the pustules, and thereby prevent the production of the pits, and the least exceptionable of these is that of M. Briquet, which became suggested to him by the experiments of M. Serres; it is the *emplastrum de vigo*. See *Emplastrum Hydrargyri*, U. S. Dispensatory.

Dr. Oliffe recommends that the whole face should be covered with the above, except the mouth, nares, and eyes. When applied in the papular state of the eruption, it is said to produce a resolution of it.

Dr. Picton, as late as 1832, is reported to have prevented the pitting after small-pox, by simply closing out the light

from the patient's chamber. M. Serres states that the best success he ever had in the treatment of this disease was in a very dark and poorly-ventilated cellar.

From an article in the Eclectic Medical Journal, we extract the following as worthy of attention :

"To prevent the pitting or disfiguration of the face resulting from small-pox, I have, for the last twelve years, pursued the course described below, by which, all who were attentive to the directions, have been cured without a single pit. Having suffered from a severe attack of the confluent form in my own person, I was led to investigate the subject; and so confident am I of its universal application, that I am willing to render all my services cheerfully and gratuitously to any patient, who, having followed my directions, finds himself at the termination of the disease, in the least degree marked or disfigured.

"The body, in small-pox, is seldom pitted, because it is not exposed to the action of the light, and that of the atmosphere upon the pustules is greatly modified; whereas, on the contrary, the face, whatever other measures are adopted, is always marked, if exposed to the action of these agents, either singly or combined; we must then protect the face of the patient from the action of both the light and the air. And I am truly proud of the honor of having been the first individual to present this valuable mode to the public—having published it several years since.

"To accomplish the above purpose, we must in the first place keep the room in which the patient lies, perfectly dark, but not closed so as to prevent a free circulation of air; and if this cannot be done, a piece of black oiled silk, well oiled, may be thrown over the face, having one or two apertures in it for the purpose of breathing. In the second place, the face must be kept *constantly well oiled* with Sweet Oil, which must be put on by *gently touching*, not rubbing, the face with a soft feather which has been dipped in the oil. Sweet Oil or Almond Oil will answer. The oil must by no means be allowed to dry on the face, and must be applied from the first appearance of the pustules, until they have disappeared or scaled off. The patient must not be allowed to touch his face with his hands at all; and should he be delirious, the

hands must be secured; neither must the face be rubbed against the pillow or bed-coverings.

“The room must be kept dark, using a lamp or candle only when a light is required for the physician or nurse to examine the patient. The eyes must be washed often with rose-water, or mucilage of Slippery-elm, which prevents them from being much injured by the disease; and the nostrils must be kept free by passing a camel’s hair pencil, well oiled, into them several times a day. The treatment, in other respects, to be successful, must be strictly eclectic.”

In patients of the third class (page 384), or those of an unbalanced organization, there exists a constant liability to various complications, as assaults upon the brain, lungs, bowels, etc. In such cases, the additional treatment that may be required, will be found under the properly-indicated heads.

In the secondary fever, we have only to equalize the circulation and to promote depuration, by the Compound Powder of Ipecacuanha and Opium; but, unless medicines are actually required in this stage, the less we interfere with it, the better it will be for the patient.

When the scabs have all fallen, the surface of the patient should be thoroughly cleansed by the use of soap and warm water, and even his cutaneous follicles should be caused, by diaphoretics, to discharge their contents, and every vessel he has used, and also his chamber, should be fumigated by the use of Sulphuric Acid and common salt, or by the Chloride of Lime or Potash, and every article of the clothing of himself, bed, and chamber should be boiled and cleansed with soap. By these means all variolous contagion may be removed from the premises.

In this disease, especially in the confluent form, there will often be found a closure of the nostrils from the matter secreted filling them and drying, and which very much interferes with the patient’s breathing; this may be obviated by removing the obstruction, and afterward passing a camel’s hair pencil, moistened with Sweet Oil, up into the nostrils several times a day. When the matter enters the eyes, it should be removed by bathing them frequently through the day with distilled rose-water.

VARIETY I.—*Varioloid—Spurious Small-Pox.*

This form of disease presents itself under so many modifications of character as to be of difficult description, which, indeed, we might have presupposed from the descriptions of various forms of variolous disease by early writers in the profession, under the names of swine-pox, sheep-pox, stone-pox, spurious pox, etc., which had been observed with those who had had the true small-pox, and with those who had not had it; and yet, no one seems to have doubted that all of these varieties, if indeed the names represent so many varieties, were referable in some mysterious manner to the variolous poison.

It is now thought that these unclassifiable maladies have occurred more frequently since the introduction of inoculation and vaccination, than before; but it is not our purpose to pursue such histories of disease as can have no practical bearing upon its pathology or treatment.

At this time we shall treat only of that variety which occurs in those who have been vaccinated, or who have had variola in the natural or inoculated form.

It appears from observation, that children who have been vaccinated are but little liable to varioloid, until after they shall have passed their fifteenth year, and this is attempted to be accounted for by supposing that the insusceptibility to variolous poison, occasioned by vaccination, becomes replaced by a susceptibility, resulting from the mutations of juvenile development.

The symptoms of varioloid very much resemble those of variola, except that those of the former are more brief in their duration, and more mild in their character. Slight fever, headache, and languor usually introduce the disease to the consciousness of the patient. Constipation, most frequently, soon becomes apparent, and then, in two or three days, the eruption appears. The nervous symptoms, lumbar pains, vomiting, etc., which are constant attendants upon variola, are generally absent in varioloid, and when present they are generally very slight. The eruption that succeeds consists of small pustules, which in number may vary from one to twenty, and in the course of four or five days they may dry up; the

duration of this stage, however, is very irregular, and therefore may terminate on the second day or continue to the fifth, from the commencement.

In all cases, whether mild or severe, the prodromic fever and its associate symptoms completely subside upon the appearance of the eruption.

A rash, resembling measles—a transient efflorescence, in many instances, precedes the eruption, which may first appear upon the extremities, or upon various parts of the surface, but the face is the most general locality of its appearance. In the beginning, it consists very generally of small, red, resisting, elevated papulæ, which pursue very unlike courses—some of them dry up, without further change, and others progress to the vesicular form, and then assume a whitish, opaline appearance, become umbilicated, and change into pustules by the end of the second or third day.

The secondary fever, characteristic of variola, very rarely occurs in this, and when it does it is very slight, exhibiting a slight acceleration of the pulse, and augmented temperature of the skin, which disappear entirely in one or two days.

The pustules in this disease do not usually fill so well as they do in variola, and their contents are more sero-purulent than purulent. Like the other stages, the third or desquamating, occurs earlier and arrives at its completion with more rapidity than in proper small-pox, so that by the eighth day the scabs are falling off, and by the twelfth or fourteenth it is completed, leaving nothing but reddish spots or blotches, which soon disappear without leaving cicatrices. The duration of this complaint is from ten to twenty days, but in a majority of instances, it may be considered as continuing from six to twelve.

CAUSES.—For a long time the etiology of this disease continued to be a matter of doubt, but at this time it is generally considered to have its origin in variolous poison upon those who have had the natural or inoculated small-pox, or who have been vaccinated. But it is nevertheless confessed, that it does occur sometimes in those who have not been vaccinated, nor suffered from any variety of variolous poison. It is furthermore asserted, that it can be reproduced by inoculation, but under no circumstances does it become prophylactic

against small-pox. This occurrence renders its character particularly obscure, even under the admission that the poison may be atmospherically changed, or that its effects may be idiosyncratically or constitutionally modified.

DIAGNOSIS.—This presents a difficult feature of the subject, as it sometimes presents the characteristics of varicella; in other and severe cases, it is scarcely distinguishable from small-pox; and in some instances, it presents a striking resemblance to the pustule of vaccina.

Professor Eberle reduces its diagnostic signs to the four following:

1. "The eruption (in varioloid) comes forth in successive clusters, at uncertain periods, between the second and fifth days."

2. "The eruption, rarely, if ever, enters into complete supuration, as occurs in small-pox."

3. "The eruption is unaccompanied by fever, except in very violent cases."

4. "Desiccation or scabbing invariably occurs much earlier than in regular variola. It commences generally on the fifth or sixth day, and the scabs usually separate by the eighth or ninth day, leaving red discs or tuberculous elevations, instead of depressions."

PROGNOSIS.—The prognosis in this disease can never be unfavorable, except in very feeble constitutions, and then only in cases of complication with disease affecting peculiarly important parts.

TREATMENT.—As varioloid differs from variola, so far as regards treatment, only in degree, being generally more mild in its character, the indications and treatment must be, too nearly the same in both, to admit of a well-defined difference; for the treatment of this form of disease, we therefore refer to that of variola.

VARIETY II.—*Vesicula Varicella*—*Chicken-Pox*.

As this affection but seldom, in either of its varieties, betrays a purely pustular character in either of its stages, but is vesicular, it should, if governed by this circumstance, be placed in the class *Vesiculæ*; but, as we are, in common with many others, disposed to regard it as a varioloid affection, we

think it best not to separate it from its varioloid associates. We do this simply through a bias of judgment, for the uncertainty that still invests it, is too great, to justify an expression of certainty with regard to it.

Its period of incubation has not been determined, but from the circumstances that seem to attend its occurrence, we infer that it differs widely from that of variola.

Its initial stage is usually introduced by loss of appetite, thirst, restlessness, acceleration of the pulse, increased heat of the surface, and pain in the epigastrium; and they may be attended by a slight inconvenience to the patient—and they may be attended by a severity equal to the worst cases of small-pox. When thus severely marked, it is attended with pain in the head, back, and extremities, and sometimes with soreness of the throat, a severe cough, and even convulsions. This stage continues from one to three days, when it is arrested by the appearance of the eruption, but in some instances, however, it continues even two or three days longer.

The eruption, which is vesicular, is usually preceded, by a few hours, with a general erythematous rash, and attended with an itching and tingling of the skin. The vesicles appear, most generally, in succession during three or four days, consequently while some of them are just appearing, others are matured, others shriveling, and lastly, others have passed into scabs. It is usual for them to appear first on the breast and back, then on the face and scalp, and lastly upon the extremities. It is said that pustules are occasionally found mixed with the vesicles, but they are not considered as constituting a feature of the disease.

Nosologists have divided varicella into three varieties, as, Varicella Lenticular, Varicella Conoidal, and Varicella Globate, or *Swine-Pox*.

1. *V. Lenticular or Chicken-Pox*.—This variety appears early in the initial stage, and may be known by the eruption consisting of small, red, and rather oblong elevations, with a shining flat surface, and a very small and lucid vesicle in the centre. At the close of the second day, the vesicle is about one-tenth of an inch in diameter, and contains a whitish lymph, which by the third day has become of a straw color. In one day more, the vesicle is shriveled, and by the seventh

it has passed, by desiccation, into a brown crust, which by the ninth or tenth becomes detached, leaving its place red, but without depression. The desiccating process continues two or three days longer, on account of the successive appearance of the vesicles.

2. *V. Conoidal or Swine-Pox*.—With a border somewhat inflamed, the vesicles, in this variety, appear suddenly; they are acuminate and filled with limpid serum on the first day; on the second, the surrounding inflammation and vesicle have enlarged, and the latter is filled with a pale, yellowish fluid; many of them are sunken on the third day, while others are full, considerably inflamed, and contain a purulent matter, which, upon healing, leave cicatrices; on the fourth day, the scabs commence forming into several varieties, as brown, yellow, and transparent. On the second and third days, fresh eruptions sometimes appear, which extend the stage of eruption to six days—and, therefore, the duration of the disease is continued to the eleventh day, possibly to the twelfth.

3. *V. Globate or Hives*.—Large, globose, and irregularly circular vesicles, with an inflamed areola, distinguish this variety. Their fluid contents at first are transparent, which, by the second day, has become turbid or whey-like, and by the third they begin to shrivel, and become yellowish, by the passage of lymph into a purulent matter, and by the fourth they pass into dark, thin, small scabs, which by the fifth day become detached, and the surface, though red, does not become cicatrized.

CAUSES.—Upon the causes of varicella, professional opinion is divided. By one party, it is maintained that it has a varicellous origin—that in an epidemic of either variola or varicella, the other is directly or indirectly present—that they never exist separately—that the varicellous poison will produce variola, and *vice versa*.

The other party maintain that small-pox epidemics often prevail without being attended by varicella, but the first deny that this is ever the case.

We do not deem it necessary to enter into all the facts and arguments by which the two parties maintain their respective opinions; but we may add, that it appears to us, that if the two forms of disease can mutually produce each other, they

should be mutually prophylactic of each other ; this, it seems, however, is not the fact.

We will further add, that the various histories which have been presented of epidemics of both, have induced us to entertain but little doubt that the variolous poison is atmospherical to an extent sufficient to produce some variety of variola, which in turn may produce a more effective poison.

DIAGNOSIS.—There can be no difficulty in distinguishing varicella from variola, nor do we believe that a proper attention to the subject should permit the former to be confounded with varioloid. The initial fever in varioloid is, generally, more severe than in varicella, but the most distinguishing diagnostic consists in the fact that varicella is always essentially vesicular, while varioloid is as essentially pustular, except in the vesicular stage of it.

PROGNOSIS.—As in varioloid, the prognosis in this disease must be regarded as favorable, under even moderately favorable circumstances as to the previous health and stamina of the patient.

TREATMENT.—As very little reaction, usually attends varicella, so very little energy is required in the treatment of it. A warm alkaline bath and some mild diaphoretic tea will generally fill the indications, but should the symptoms indicate greater energy some emetic should be administered, and then a stimulating enema. The diet should be simple and moderate.

VARIETY III. — *Variola Vaccina* — *Cow-Pox*.

This is the small-pox of cattle, a contagious inflammation of the skin, which is sometimes communicated to those human beings who attend them, as milk-maids, etc. It consists of multilocular and umbilicated vesicles, upon inflamed bases, which gradually become pustular, and elaborate, dark-brown scabs that leave upon their detachment deep and permanent cicatrices. The constitutional symptoms are mild through its initial and vesicular progress, but they increase, and sometimes become quite severe, particularly the secondary inflammation, as the pustular or suppurative stage advances to its full development.

When the disease is contracted in this casual way, the

virus is communicated from the teats or udder of the cow to those who milk them, and from horses to those who groom them, consequently the eruption appears on the backs of the hands and between the fingers where the cuticle is thin, for it has been clearly shown that an abrasion of the surface or epidermis is not essential to the inoculation.

It has also been discovered that when the virus is applied to an abraded or chapped surface, the consequence is apt to be subcutaneous abscesses, which are attended with much severity, producing, more particularly, inflammation of the lymphatic vessels and glands.

CAUSES.—It will not perhaps be disputed by any one, that the inferior animals are liable to become diseased by all the causes that inflict disease upon the human race, but in consequence of organic differences, it would, *a priori*, be expected that the manifestations would be, in most animals, very greatly modified; therefore, it may be presumed that no one, at this time, would be surprised to learn that a disease analogous to small-pox occurs in both the cow and the horse; but in 1796, the effect upon the public mind was very different, when, for the first time, the fact was announced by the immortal Jenner. The fact is now well established that small-pox appears, not only epidemically but also epizootically, particularly with horses and cattle. Jenner was aware that the horse was sometimes afflicted with a disease, which, when communicated to the cow, produced a disease that could not be distinguished from true cow-pox. We can have no doubt, at this time, that the disease which then appeared in the horse was the genuine small-pox, which is now known to appear in the heels of that animal, and for a long time was confounded with the *grease*. As this work is intended for practical purposes, we cannot enter into the history of the many observations and experiments which have produced certainty, in many respects, with reference to this subject—we cannot do more than give a summary of the results.

It is now pretty satisfactorily ascertained that when the small-pox prevails in human society, as an epidemic, the cow-pox prevails among cattle—that when the small-pox contagion is transmitted to cattle, a true cow-pox is produced, and also when it is produced by inoculation. And it is, if possible,

still better known, that when cow-pox is transmitted to the human subject, by inoculation, a pustule, precisely similar to cow-pox is produced. Touching these results, we will cite one experiment:

Dr. Macmichael, in a paper which was read before the College of Physicians, in 1828, wrote thus: "Vaccine matter having failed in Egypt, medical gentlemen were led to institute certain experiments, by which it has been discovered that by inoculating the cow with small-pox, from the human body, a fine, active, vaccine virus is produced."

VARIETY IV.—*Inoculated Variola Vaccina—Vaccination.*

In the operation called *vaccination*, several plans have been practiced, but that which is generally preferred is the puncture or punctures, at the inferior extremity of the deltoid muscle, with the point of a lancet, previously imbued with the lymph or virus. In order that the papillary surface may be obtained without the effusion of blood, the punctures should be made obliquely through the epiderma.

When the virus is of a proper quality, the patient in a proper condition, and the operation has been properly performed, there will succeed two or three days of incubation, and upon the third or fourth the papular stage will be introduced by some hardness of the skin and some elevation of its surface; on the fifth or sixth day, the vesicular stage will commence, indicated by a slight effusion of the liquor sanguinis beneath the epiderma, which passes into an oval and whitish vesicle of a pearly luster, which increases in size and fullness to the eighth or ninth, when it is umbilicated and perfect. Upon the eighth or ninth day it begins to become pustular, loses its umbilicated character, becomes flattened or even more convex at the center than at the periphery, and exhibits numerous small cells of lymph, and then becomes surrounded by an inflamed areola which is vividly red—presenting "*the pearl upon the rose*." By the tenth day, the areola enlarges from a few lines to one or two inches or more, attended by tumefaction, an increase of redness, some itching in the part, pain upon muscular movements of the arm, soreness of the axillary glands, and sometimes an erythematous blush appears in patches on various parts of the body.

The fluid contained in the vesicle becomes purulent by the eleventh day, and the areola begins to diminish, and desiccation begins at the center, and proceeds gradually toward the circumference. As the vesicle desiccates into a dark-brownish scab or crust of an irregular form, the areola disappears and the tumefaction subsides. The crust, after assuming a blackish hue, becomes detached at the close of seventeen days after vaccination, and the cicatrix that becomes thus exposed, presents in its bottom numerous little pits or foveolæ, corresponding with the original cells of the vesicle.

Corresponding with the inflammation of the areola, there is a febrile reaction, but it is generally slight, and in many instances scarcely perceptible, unless there should exist some adverse idiosyncrasy in the constitution, in which case the symptoms may be severe, and even lead to a fatal termination.

For vaccination to produce a complete protection against the small-pox, it is indispensable that its course should be about as we have above described it. When its course is irregular or abnormal, it is no security against variola, nor should it be presumed to be, any more than any other inflammation that might succeed to a cause of local irritation. The most suitable period for vaccination, is between the third and seventh month, because of its greater absence from those forms of disease which are incidental to early youth. It is proper to add that the local affection, in infancy, is always more effectually marked than in adult age; nevertheless, the process should be deferred if there should exist a cutaneous disease, more particularly of the vesicular character.

Deviations, in almost all possible respects, do sometimes attend the vaccinating process, and when they do the purpose for which it was instituted may be considered as defeated, consequently it becomes a matter of the first importance to observe its progress.

In some instances, the whole course of the affection consumes but eight or nine days. In other instances, ten, fifteen, or twenty days elapse between the introduction of the virus and the formation of the pustule. In some cases, considerable inflammation and the development of the vesicle will appear by the second day after vaccination. In other instances, a true pustule appears, instead of a vesicle, and that too by the

first or second day after the vaccination. In other cases again, there may be present a well-defined areola, surrounding a pustule which is elevated instead of being depressed or umbilicated. In other cases, the vesicle is perfect, but the areola is absent on the ninth or even the tenth day. Sometimes, again, the vesicle is too small, and beside, it may be flattened without a prominent margin.

In all such cases as the preceding, doubts should be entertained as to the efficiency of the vaccination. It is not common for more than one pock to appear after vaccination, and yet, in some instances, several appear in the immediate vicinity of the original one, and in other instances they have been known to appear on various parts of the body. So far as is yet known, such manifestations of vaccination are valid.

Vaccination; what does it imply? Dr. Wilson answers, in substance, as follows:

By it we understand that the individual from whom the lymph or virus is taken, is of good, sound health — is not obese, gross, nor lymphatic.

That it shall not have become deteriorated by neglect or age.

That it shall have been taken from the vesicle between the fifth and eighth day, from one who had passed normally, or as we have described the affection, through the vaccino process.

That the subject vaccinated shall have passed normally through the several stages of the process.

That one vesicle at least shall have been permitted to progress to the spontaneous detachment of its scab or crust.

That the cicatrix shall have all the marks that indicate a successful vaccination.

Dr. Wilson regards vaccina and variola as absolutely one and the same, and that vaccination, as he understands it, and as we have defined it, to be as thorough a protection against small-pox, as the small-pox itself could be, for neither, nor both, constitute a certain protection to all persons. Some persons are insusceptible to the contagion of small-pox and to the virus of vaccina; and in others, no number of attacks of the small-pox appears to exhaust their susceptibility to its contagion.

Vaccination Tests.—Several tests of successful vaccination

have been proposed, but that recommended by Dr. Bryce, of Edinburgh, is the only one we shall name or recommend; and this is to re-vaccinate in a few days, three or four, after the first vaccination. If the first shall have properly impressed the system, the second will hurry through its stages, overtake the first, and terminate with it.

Re-establishment of Vaccine Protection.—It is now, perhaps, universally believed, that when the animal organism has been thoroughly operated upon by contagion, that its susceptibility is destroyed to a second assault by a similar contagion; and the opinion is as universally entertained that the impressions of the first contagious attack become gradually obliterated—that the original susceptibility becomes restored; both conclusions are no doubt true, but in very different degrees in different individuals.

Some persons, through a great portion of life, and others, possibly through life, are insusceptible to certain contagions; and it may be said, perhaps, with entire truth, that some are barely susceptible to one assault, while others are so susceptible as to be vulnerable, at short intervals, through life. Some have been rendered invulnerable through a long life by one vaccination or variolation, and yet constantly exposed, while others have had frequent attacks from the same or similar contagion.

If these views are correct, and so we think them to be, no definite period can be fixed upon for re-vaccination as a requisite means of re-establishing the protective influence of vaccina.

As no mischief, and but little inconvenience can result from re-vaccination, it would be prudent to have it done at periods of seven years. The most susceptible cannot be secure, we think, for a longer period; but for the benefit of those who are disposed to risk a discretionary judgment on the subject, we would suggest, without experience in variolous forms of disease, however, but from our acquaintance with the human constitutions or temperaments, that the bilious and its lean and dense varieties are probably rendered secure by one invasion; though this is our opinion, we do not advise them to risk it. The lymphatic combinations with the bilious would do well to re-vaccinate at intervals of ten years, and also the

sanguine; but the lymphatic combinations of the sanguine would act wisely to repeat the process at intervals of seven years. The lean varieties of the sanguine and the encephalic, if not secured by one impression, are not to be considered, at most, as being in much danger.

If observations had been made during the preceding twenty years, with reference to the existing temperament, measurably all the questions involved in this subject, could now be answered.

As shedding much light on the subject of vaccination, and as an illustration of its value, notwithstanding the errors and carelessness that may have attended its practice, we make a quotation from Dr. West, on infantile forms of disease.

“But, although we should take a comparatively low estimate of the value of vaccination, and confess to the fullest extent the failure in its *complete* preservative virtue, we shall yet find, in the following modifying and mitigating influence which it exerts over small-pox, more than enough to make us value it as a priceless boon. Twenty years ago, small-pox raged epidemically at Marseilles, where it attacked almost exclusively persons under thirty years of age. M. Favart, who sent an account of this epidemic to the Academy of Medicine at Marseilles, estimated the number of the inhabitants of that city under thirty years of age at forty thousand. Of these, about three thousand had been vaccinated, two thousand had had the small-pox casually or by inoculation, and eight thousand had had neither variola nor cow-pox. Of this last class, four thousand, or one to two, were attacked by small-pox, and one hundred of them, or one in four, died. Of those who had had small-pox previously, only twenty, or one in one thousand, were again affected; but four of these, or one in five, died; while of the vaccinated, although two thousand, or one in fifteen, had it, yet it proved fatal only to twenty, or one per cent.”

According to these statistics, the mortality of vaccination and of no vaccination stand related to each other as one to three and three-fourths; this is a great saving, but it does not equal the desire of the medical philanthropist.

TREATMENT.—In the inoculated form of vaccina, but little medication, in general, is demanded; the alkaline bath, warm

pediluvia, warm diaphoretic drinks, and slightly stimulating enemas, will usually prove sufficient. Much care, however, is required to prevent children from injuring the vesicle.

SPECIES II.—*Ecthyma*.

The only profitable division that we can make of this disease, is into *acute* and *chronic*. To the former children are peculiarly subject; and it is very frequently preceded by constitutional symptoms, such as lassitude, pains in the limbs, loss of appetite, epigastric uneasiness, and irregularity of the bowels, and with these symptoms the patient is more or less troubled during the continuance of the disease. The eruption, most generally, appears upon the neck, breast, and shoulders, sometimes on the extremities, but rarely, if ever, upon the face and head. It appears in large pustules, elevated upon a hard, dry, and inflamed base, and covered with greenish-brown or yellow, with little or no inflamed areola surrounding them; they are rarely grouped or confluent, but separated from each other. In the course of three or four days from the commencement, they exhibit pus at their summits and resemble small boils. In a short time they discharge their pus, which concretes into the scabs above-mentioned. In a week or two from the beginning, these scabs fall off, leaving dark-red surfaces of half an inch or more in diameter. The extent of the attendant fever is such, sometimes, as to occasion a swelling of the lymphatic glands in their vicinage.

The chronic form of *ecthyma* appears to hold a connection with chronic forms of disease of the digestive and respiratory organs, and becomes developed on those who have become emaciated by them. In this form, the eruption is renewed without ceasing, multiplies, spreads, and becomes confluent. Both forms are attended with constitutional symptoms—both produce a rapid emaciation of the system: but neither of them is contagious.

CAUSES.—Most generally this disease, in all its forms, appears to be dependent upon some depravity of the system. Some substances are known to produce a disease of this character, and tartar emetic is one of them. Badly-nourished and greatly-neglected infants are particularly liable to it. Various internal irritations are said, also, to produce it. The general

causes are said to consist in a want of proper food, clothing, and cleanliness, but when it occurs in children, we suspect that it most generally results from a semi-viable condition of its organization—a feeble cerebellum.

DIAGNOSIS.—The only disease that may occur, in infancy, with which it could be confounded, is syphilitic, and with reference to this, the history of the case will generally be sufficient; but, as a diagnostic, we may add, that there is not much irritation attending the syphilitic sores, and beside, they have a copper-colored areola, and will, more likely, be located on the forehead and commissure of the nose.

PROGNOSIS.—If the constitution is good—measurably sound, the prognosis is favorable; but under a contrary condition of the system, more particularly if complicated with any other form of disease, then it is unfavorable.

INDICATIONS AND TREATMENT.—Emollient applications to the local inflammation, remove all causes of irritation, correct the secretions, and sustain nutrition.

The indications above-named will be sufficient for most cases, but in some there is much inflammation, and in others great debility, and therefore considerable extremes and variety of means will be demanded in the treatment.

In the acute form, all the ordinary means to overcome spasm or constriction, and to promote depuration, will be required, for which purpose the Compound Powder of Ipecacuanha and Opium, or other diaphoretics, with diluents, should be given; the bowels should be kept in a soluble condition by mild laxatives, but active purgation must be avoided. In connection with this, the warm bath (with the addition of Mucilage of Elm to it, in case of much local irritation), may be used daily, or every other day, as required.

In the chronic form, generally, and at the close of the acute, in feeble children, tonics, as the bitter infusions, mineral acids, Iron, Quinine, etc., may become necessary, and as a local application, the Compound Ointment of Zinc, will be found productive of excellent effect. The patient should be allowed free access to the open air, if his condition will permit. The diet should be light, nutritious, and of easy digestion.

SPECIES III.—*Impetigo*.

Of this species, some six or seven varieties have been described, but only two of them are of such importance as to claim our attention, viz: *Impetigo Larvalis* (*Porriigo Larvalis* of Willan) and *Impetigo Capitis*.

VARIETY I.—*Impetigo Larvalis*—*Crusta Lactea*.

This disease consists of many small pustules of a whitish color, based upon a very red surface. They gradually change to yellow, and then to brown, and in a short time break and form a scab, from which issues an ichorous discharge attended with much itching. As the pustules extend, the scabby surface becomes enlarged, and also thickened, by the concretion of fresh matter upon its inferior surface. The eruption is very apt to begin upon the forehead or cheek, and, by the species of reinforcement above-described, it travels to various parts of the body, and sometimes to almost every part of it; nevertheless, the face, scalp, and neck are its most favorite positions; and, strictly speaking, a red spot, at the point of beginning, and not a whitish pustule, is the first indication of the disease.

Like most other forms of cutaneous disease, it manifests considerable variety. It is sometimes confined to very limited areas, and the discharge is very mild; at other times, even when not extensive, the discharge is so acid as to excoriate the adjoining surface; then again, it may be confined to a particular part of the face, as the chin, the cheek, or both of the lips.

When the crust is removed, the surface is found to be red, inflamed, and excoriated, and so abundant is the secretion sometimes that scabs cannot form. At other times, there is but little discharge, and the scabs are dry and adherent. It causes, sometimes, a considerable inflammation and enlargement of the glands of the neck, and it is liable sometimes to be complicated with inflammation of the eyes and auditory meatus.

Its name is derived from the circumstance that its scales or crusts form a mask or *larva*, and, in keeping with its name,

the features are so covered with irregular, greenish, or yellowish crusts as not to be recognizable.

It is sometimes quite acute, and yields readily to proper medication, but at other times it appears to be chronic and continues even for years, indicating, as a matter of course, a general and deeply-founded cause or special anæmia of the system, which is most probably pulmonic, as we shall now show.

CAUSES.—Prof. Dewees thinks that it is invariably associated with dentition, and that it appears sooner or later, depending upon the retarded or advanced condition of this process.

That the professor is in the general correct, we have no doubt, but not universally so, because it has been known to appear and disappear before the commencement of that process.

Billard says, that there does appear to be some plausibility in the vulgar opinion that impetigo larvalis is a salutary depuration, because of the vigorous appearance which he had observed some children to possess after the disappearance of the disease.

Worcester says, that, in a great majority of instances, no satisfactory cause can be assigned for impetigo. "Dentition (he says) seems to be the most common cause of crusta lactea."

Dr. Wood says, that "the causes of impetigo are not always obvious. Dentition appears to dispose to it."

As dentition is purely a physiological process, it cannot, therefore, be attended, necessarily, by any form of disease. At most, then, it can only become a source of general irritation—interfere with the physiological processes in general. But, if we admit that this process, when tardy, produces crusta lactea, we have made only a very insignificant advance toward an understanding of the subject. Admit this as a cause, and then the questions arise, what occasioned the difficult dentition? and how did it occasion impetigo larvalis? We may be mistaken, but we think that it will not be difficult to give a satisfactory answer to these questions.

The children who suffer from difficult dentition and impetigo

larvalis, are represented by the second and third classes of Table, page 20.

In both of these classes there is a feeble pulmonary system; but children who represent the first class, are those who rarely, or never, suffer from the development of any of the infantile physiological processes. Those of the second class become fat—look well, and yet their obesity is consequent upon their pulmonary incapacity—carbon, instead of being eliminated, is stored away in the form of adeps. Dentition interrupts the process of nutrition (and so may other causes of irritation, and hence impetigo larvalis is not always associated with the dental process), becomes interrupted, the lungs are incapable of sufficient depuration, the kidneys become so, and to aid in these processes another apparatus is established in the skin—impetigo larvalis. The child becomes lean and emaciated, but after a time the causes of irritation become removed—the nutritive process becomes re-established—the child becomes obese—regains its fine looks and meets with Dr. Billard, and he is induced to suspect that there is some plausibility in the vulgar opinion that impetigo larvalis is a salutary depuration. Our readers may question our reasoning, but the facts are as we have stated them.

Those children who represent the third class are more liable to convulsions and cerebral congestions, than to impetigo larvalis; nevertheless, when all the power of their systems is appropriated, before the period of dentition, to the nutritive process, and as they are apt through life to take more food than they can digest, we discover the source of their liability to this disease, and the reason why it continues so long with them. The lungs are incapable of performing their depurative duty, and nutrition is incapable of aiding them by the formation of adeps, and thus this disease becomes their companion, until exercise shall so increase as to render the lungs so capable of their function, as to promote renal depuration and relieve the skin.

The table to which we have referred demonstrates the existence of certain organic relations, and death demonstrates the consequences—so far, there is no room for speculation, and when we contemplate these conditions and the results, in connection with what we have said of infantile disease, we

feel very confident that our conclusions, in the main, are correct.

DIAGNOSIS.— This affection is pustular, and eczema is vesicular, therefore, attention to these facts will distinguish one from the other. See diagnosis to the next species.

PROGNOSIS.— An arrest of this eruption is very apt to be attended by serious consequences; nevertheless, when children die in this complaint, it is generally from some coincident form of disease, which may even have been, remotely, the cause of it.

INDICATIONS.— Cleanse the skin — by soluble applications, remove the scabs — promote secretion — sustain nutrition by nitrogenous food and plenty of exercise.

TREATMENT.— It is thought to be best, by some, to let this disease alone, inasmuch as it is but rarely fatal, though sometimes very severe, and leaves no marks upon the skin. But, we inquire, is it not very troublesome? Does not the discharge, which is characteristic of it, weaken, and even exhaust, the patient? Does not the continual itching it produces, through both day and night, defeat its rest, and therefore its nutrition?

If these interrogatories receive an affirmative answer, can it be either wise or humane to allow it to progress to its own exhaustion, without control or melioration?

It is contended by others, that this affection is only an indication of an effort on the part of the system to throw off a more troublesome or fatal malady, and that on this account, the best practice is to let it alone. This doctrine applies with as much force to every other form of disease, as it does to this. Are not small-pox, bilious fever, and Asiatic cholera, efforts of the system to cast off or expel disease? Is not this absolutely true of all forms of disease? If it be, then it must be best to let them all alone.

According to our pathology, disease is a unit, and consequently impunity cannot be granted to one form any more than to another, so far as principle is concerned. And it should furthermore, be remembered, that each form of disease has, under circumstances, a prescribed course to run—and to arrest this course, prematurely, is to do mischief; hence it is true, that mischief will result from the drying up of this eruption.

It must be cured—that is, the disease, of which it is a manifestation, must be removed, but in the meantime it can be meliorated.

The cure, then, consists in carrying out the indications—keep the system in that condition which will dispense with eruption as soon as it should be.

In the treatment of this disease, Prof. Dewees recommends a “diminution of nourishment of every kind,” and particularly prohibits the use of any “in which animal food enters.” We cannot indorse this doctrine, because we have no doubt but that this plan has rendered chronic many cases which otherwise would have terminated as an acute one. We have both tried and witnessed this plan of treatment in inflammations arising from wounds, and we hesitate not to assert that patients are sometimes confined to their beds six months by it, who, under a generous diet, would have been about in one.

Before the child became sick, a given quantity of nourishment was requisite to develop the system and maintain the ordinary repairs; now, to these demands for aid—for food, is added a wasting disease, and one too, which frequently continues for several months. Now, add to the wasting effects of the disease, partial starvation, and then say whether we should expect any other result than a chronic form of the disease, and such a debility of the system as to render it unable to cast off the disease?

We do not advocate feeding to repletion, under any circumstances, nor do we advocate starving under any. Under the circumstances of waste, the child can spare none of the real elements of nutrition, but it should be deprived of all others, because they produce irritation. Upon this principle, we should advise, if the patient be weaned, azotized food, as animal muscle, or a tea or broth made of it; and, if it be not weaned, the mother should thus live, for the good of the child.

Carbonaceous food should be prohibited, unless demanded by the necessity of animal heat. By this course the child is simply nourished, and all causes of plethora and irritation are avoided.

Finally, the treatment under the head of Herpes is equally applicable to Impetigo.

VARIETY II. — *Impetigo Capitis*.

This eruption does not differ in any essential element from the preceding, except that it attacks the scalp, instead of the face. The discharge, in drying, mats the hair, and both united form thick crusts or scabs, and being by the hair, firmly adherent to the head, produce great irritation and a constant discharge of cero-purulent, or purulent matter, and without great attention to cleanliness, the hair becomes felted into a disgusting mass—furnishing shelter and protection to immense numbers of vermin.

It commences in a spot or spots which are red and of an oval or round shape, and upon which appear small, flattened, and grouped pustules of slight elevation, that burst, in three or four days, and discharge an abundant secretion of a viscid character, that spreads over the affected part and soon dries into thick, brittle, greenish, or yellow and semi-transparent crusts or scales. Sometimes the patches continue distinct, with healthy skin between them, and at other times they coalesce and form a very large one.

The detachment of the scabs usually takes the hair with them, but it returns when the disease is cured. The scabs are brittle, and when comminuted, the fragments resemble old mortar in a similar condition. Inflammation sometimes runs high—abscesses form under the scalp—the cervical glands become sore and tumefied, and the general health greatly suffers.

For its causes, consequences, and therapeutics, see *Impetigo Larvalis*.

SPECIES IV.—*Porrigo or Favus*.

This species is thought to have its origin in a vegetable cryptogamic growth, and the opinion may be founded in truth. That some of the phenomena of these forms of disease may have a vegetable cryptogamic appearance, we are ready to admit, but until we have further light upon the subject, we can go no further. Authors notice two varieties, *Porrigo Lupinoso* and *Porrigo Scutulata*.

VARIETY I. — *Porrigo Lupinosa* — *Tinea Capitis* — *Scald-Head*.

This form of disease attacks infants, but it is not so common to them, as to children between five and ten years of age. It is most generally confined to the scalp, but it has been seen upon other parts of the body, to which it may have been transferred from the head by the nails or other means, as it is beyond doubt infectious.

When the scabs are thoroughly formed, they present an appearance similar to a honey-comb, and hence the name of *favus*. It first appears in specks of a crusty character, and rising but little, if any, above the common level of the surrounding surface. They exhibit no method in their location, but are scattered over the surface without order; sometimes they continue quite distinct, but at other times they are crowded, and as the scabs, which succeed the pustules, enlarge, they mingle together, so as to cover continuously large portions of the surface.

The pustules seem to form or appear about the roots of the hairs, and hence one hair will usually be found passing through the scab. When the inflammation has existed for some length of time, the bulbs of the hairs become so diseased that they fall or disappear, leaving the skin white and smooth. The cellular tissue surrounding these denuded patches, not unfrequently becomes the seat of chronic abscesses, which, extending their influence to the cervical glands, render them sore and painful.

When the scabs have enlarged and mingled together, they form a great many cup-like hollows, which bear a considerable resemblance to the depressions in the fructification of some species of lichen. When these scabs are large, their edges often meet, and the scabious surface becomes a continuous incrustation. In this process, as the scabs are round or roundish, they acquire, in the force of crowding, a hexagonal shape, and thus, like the cells of a honeycomb, they fit into each other—each scab still retaining its cup or little central depression.

When this incrustation is allowed to proceed undisturbed, it may continue for years, but in such an event it becomes

drier, less cohesive, whitish, and disintegrates into particles which resemble the crumbs and dust of old mortar. In this process, the lichen-like condition of the incrustation is entirely destroyed.

Pediculi are apt to feast and revel in neglected cases of this disease, and when they do, they very much increase the suffering of the patient, by the severe itching they occasion.

TREATMENT.—In the first place, shave the head as closely as possible, and then apply an Elm poultice over the whole scalp, until the soreness and irritation which attend this affection are removed; then wash the head twice a day with strong soap-suds. Once a day wash the head with the Tincture of Phyl. Decandi.

This plan of treatment, with the frequent shaving of the head, should be continued for three or four weeks; but if this should not be sufficient, the following ointment, which has, in many cases, been found to be very successful, may be adopted:

℞. Pix Liquida, ea., ʒij,
 Capsicum, gr. xxx,
 Pulv. Sulph. Zinc, gr., l,
 Creosote, gtts., xx.

This should be well mixed in a mortar and applied to the scalp night and morning. After having well washed the head, as above recommended, this ointment should be continued several days, but if the patient should experience much pain from the application, it should not be applied so frequently. It should be remembered, however, that in all cases the head should be shaved close before any treatment is adopted.

If the above treatment should not be sufficient to remove the disease, in consequence of a hardened condition of the scalp, which frequently attends this disease, the Irritating Plaster should be applied over the whole scalp until free vesication is produced. This will soon be attended with copious, purulent discharges, which should be continued for ten or twelve days.

When the parts become very much inflamed, the Compound Lead Ointment or Slippery-elm poultice may be applied until it subsides; and after the parts have healed, if there be any

portion of the scalp disposed to assume its former appearance, the Irritating Plaster may again be applied and treated as above.

Constitutional treatment is very important, especially in individuals of a scrofulous habit. The alkaline bath should be applied, accompanied with active friction over the whole body, every day during the treatment.

If there be any tendency to constipation of the bowels, it should be removed by mild laxatives, after which the Compound Syrup of Stillingia, in alterative doses, should be administered three times a day.

Where the above plan of treatment has been adopted there has been little difficulty in curing all the cases.

VARIETY II.—*Porriago Scutulata*—*Tinea Annularis*.

This eruption more rarely attacks infants than others, and it is more rarely confined to the scalp—appearing sometimes upon the forehead, face, neck, and other portions of the cutaneous surface. It differs also from the other, in being more obstinate; but the distinguishing difference between the two, consists in the annular arrangement of the eruptions in this. The scabs have that lichen appearance which is characteristic of the cryptogamic class.

It begins by planting minute and thickly-crowded crusts upon a red spot or surface, and as they enlarge they exhibit the cup-shape upon their surfaces. They enlarge and progress precisely as in the preceding form, except that they group into circular clusters. The disease extends by the development of new patches upon the periphery of those that preceded; consequently, by the union of many clusters, thus formed, the entire scalp may become incrustated.

CAUSES.—But little is certainly known of the causes of porriago, as of other cutaneous eruptions.

Dr. Worcester says: "While no doubt of its contagiousness exists, some are much more liable to contract it than others; children of a lymphatic* or scrofulous temperament,

* So far as we have yet learned, the profession, practically at least, have made no distinction between fat and lymph, the latter only is constitutional. We think it probable the above reference was to the obese; if so, it confirms our pathological views.

ill-fed and clad, living in low, damp, and confined situations, in filth and neglect, are the more frequent subjects of it; in such situations, occasionally, sporadic cases of disease occur without any exposure to infection." Of this we have no doubt.

We have seen the disease under circumstances quite the opposite of all this, but we do not remember to have seen it unassociated with the fats. In the mountains of Arkansas, where we have seen it, the children usually live upon old, fat bacon through the summer, and upon fresh bear and hog fat through the winter. With such a life, there is filth, but we think that both the filth and the disease had their origin in the mode of life. Such children, furthermore, often live through the winter without shoes or other means of keeping the feet warm.

We are candidly of the opinion, that if the profession will turn their attention to the relations we have exposed in the cerebellum, and the use of fats, they will succeed much better than they hitherto have done, in discovering the causes of cutaneous disease.

DIAGNOSIS.—There is no other disease, common to children, with which this should be confounded, and yet it has been done with impetigo; but the cup-like scabs of the former will always distinguish it, to which we may add the hair that is usually to be found passing through the cup. The circular form of the patches, in *tinea annularis*, will serve to distinguish the two varieties, one from the other.

PROGNOSIS.—If we were to suppose the disease allowed to run its own course, our prognosis would be decidedly unfavorable, because spontaneous recoveries are rare, and even then it is at a heavy cost to the patient—as permanent baldness, enfeebled intellect, premature old age, and previous long suffering. Such is the depravity of some constitutions, which it attacks, as to render it incurable; but instances of this kind are exceedingly few.

INDICATIONS.—Remove all local and general causes of irritation—excite the diseased parts to a healthy action—improve the general health, and maintain a depurating action of the kidneys.

The first of these indications can be effected by cutting the hair from the diseased surface with a pair of scissors, and the

removal of the crusts. To effect the latter, cover the diseased surface with lint saturated with a solution of Subcarbonate of Soda or Potash, and then cover it with an oiled silk cap or one of caoutchouc. By keeping the crusts thus saturated for twelve or twenty-four hours, they may be easily removed; the part should then be thoroughly washed with soap-and-water, to remove all particles of crust and hair that may be upon the surface. If heat or inflammation be present, evaporating lotions should be applied until it is reduced.

The general causes of irritation may consist of diarrhea, constipation, or some other symptom of disease—in other words, all constitutional vices of the system should be removed.

To excite in the part a healthy action, various stimulants have been recommended—the Tincture of Iodine may answer every purpose. It may be placed on the part by the use of a camel's hair brush after the morning ablutions.

All possible exercise, avoiding fatigue, should be given to the patient, and, as far as possible, he should live on azotized food.

ORDER II.

DRY FORMS OF DISEASE IN THE DERMA.

GENUS I.—EXANTHEMATA.

REMARKS.—This genus comprises those dermoid forms of disease which are distinguished by an inflammatory redness, that is so superficial as to disappear upon pressure. The whole surface may be covered with redness, or it may only appear in spots, with intervals of healthy skin. The spots have no particular size or shape.

SPECIES I.—*Roseola*—*Rose Rash*.

This form of disease is exceedingly troublesome to the little patient, and apart from this circumstance, its importance consists, mainly, in so understanding its diagnosis as not to confound it with any other, particularly with those with which it is frequently associated. Children are more liable to it during dentition, and between the ages of six and twelve months, than at a more early period.

It consists in a superficial inflammation of the skin, which is not as extensive as erythema, but is frequently mixed with symptoms of variola vaccina, which succeed inoculation. Summer is more adapted to its occurrence than any other season; but no matter at what season it occurs, it renders the little patient cross and restless. It occurs upon the body, neck, and arms, and consists, very frequently, of nothing more than small patches of a rosy-red color, smooth surface, and irregular form, and so changeable as to appear and disappear several times in the course of a day. A large majority of the cases are unattended by either fever or derangement of any of the digestive functions.

If it should be associated with cerebral, alimentary, or respiratory irritation, it should not be passed over as a slight or unimportant concern, but combated with suitable remedies; but in the absence of any such irritation, its medication will be simple.

CAUSES.—These are acknowledged to be obscure, but it is a frequent attendant upon dentition, improper food—irritation of the mucous membrane of the lungs, stomach, and intestines.

DIAGNOSIS.—This is the most difficult feature of the disease, because it so much resembles rubeola, erythema, and scarlatina. Rubeola is attended by fever, cough, injected conjunctiva, and roseola is not. Its patches are smaller, more numerous, less permanent, and of a brighter rose color than those of erythema. Scarlatina is attended with violent fever, great heat, inflamed fauces, peculiar odor, and a deeper tint of color, than roseola.

PROGNOSIS.—It is attended with no danger, but renders the patient very restless.

TREATMENT.—The treatment of roseola is very simple; the patient should be placed upon warm, diluent drinks, with low diet and confinement to his room, until the eruption appears, when a mild purgative may be given, which will usually be found sufficient.

However, should there be a high fever, and the eruption but slowly manifests itself, the warm bath with warm diaphoretic drinks will be serviceable.

If much heat or itching attends the eruption, it may be

allayed by an aqueous solution of Borax, or Borax dissolved in an infusion of Hydrastis.

In chronic cases, and in weakly patients, vegetable tonics, as Hydrastis, Columbo, Gentian, etc., together with mineral acids, should be perseveringly employed, and the diet should be nutritious and digestible, avoiding all greasy articles.

SPECIES II.—*Urticaria*—*Nettle-Rash*.

The appearances presented by the skin, in this disease, and the sensations which attend them, are so much like those produced by the stinging of nettles, as to suggest the name. It is not contagious, and no number of attacks will render the system invulnerable to it. It is not considered to be dangerous, but it is exceedingly tormenting. The eruption consists of roundish or oblong, solid, little elevations, either red or white, but usually both, with the latter color in the center.

Appearances, very similar to those which distinguish this disease, may be produced on the skin by a blow with the lash of a whip, which are vulgarly called *wheeks*, and the marks of this disease are sometimes called *wheals*, because of this resemblance, and it is probable that the former of these vulgarisms is only a corruption of the latter.

Urticaria has been divided into some half a dozen varieties, but only one of them properly claims our attention, and that one is the variety which appears spontaneously and without fever, and which may appear and disappear several times in a day. It is a very mild disease with infants, producing no mischief, except crying and restlessness.

CAUSES.—These are, most generally, in young children. intestinal irritation, indigestible food, stimulating food or drink, medicines, particularly of a poisonous or indigestible character.

DIAGNOSIS.—Urticaria may be distinguished from the rash of nettles by its history; from lichen urticatus, by the papules being more prominent, permanent, larger, rounder, and redder.

PROGNOSIS.—The tendency in urticaria to repeated returns, and its obstinacy, are its worst features. It is not dangerous, but requires perseverance in a judicious course of treatment.

TREATMENT.—The first step, in the treatment, is to remove the cause, if discoverable; but whether discoverable or not, it

will be proper to allay the itching, and to remove such cutaneous constriction as may exist, by the use of the alkaline bath, which should be followed by a mild emetic, as the Acetous Emetic Tincture, or Compound Tincture of Lobelia, to remove such mucus and other offending matter as the stomach may contain.

The large intestines should also be evacuated by enemas; and in full habits, with high fever, purgatives may be administered internally; the Compound Powder of Jalap, or, with infants, the Compound Tincture of Jalap will be found of great service.

In cases of plethora, venesection is recommended, but the above remedies, energetically used, will be all-sufficient.

Opiates are recommended to allay the itching and to secure rest, but these objects can be more judiciously obtained by the use of saline, acidulated, or alkaline baths—they will promote an equalization of the circulation and depuration, while Opium will only afford temporary relief by suspending all action.

In the event that the eruption should be intermittent, recourse should be had to antiperiodics, such as S. Quinia, Tincture of Macrotys; and in chronic cases, S. Quinia and Ferrocyanuret of Iron.

The diet should be such as we have hitherto recommended in cutaneous affections; and when the disease is present during dentition, proper attention should be paid to the condition of the gums.

SPECIES III.—*Erythema*.

Some eight or nine varieties of this disease have been reported, but the distinctions are more scientific than practically useful.

Erythema is characterized by a red, glabrous, tumid fullness of the integuments, attended by burning pain and terminating in cuticular scabs or vesicles. The inflammation is usually very superficial, and non-productive of any general derangement of the system.

The scrotum and superior portions of the thighs, in children, are the most liable to this affection.

When the affection is on the scrotum, and it assumes a red-copper color, and resists remedial efforts, more especially if

there be much repletion of the cellular tissue, the physician may feel justified in suspecting it to be syphilitic, and equally so in seeking special information as to the health of the parents.

CAUSES.—Mucous irritation and external irritants may be regarded as the general causes, and among the latter may be included the excrementitious matters of the child, a want of proper attention to cleanliness, and of the former, visceral disease in general.

DIAGNOSIS.—In children, it can only be confounded with lichen and psoriasis, and when the small, distinct, conical papule of lichen, and the flattened, scaly tubercle of psoriasis, are considered, such a mistake should not be made.

PROGNOSIS.—When the cause is removed, the disease disappears, except when located at the junction of the skin with a mucous membrane—then trouble may be expected, and caution is demanded.

TREATMENT.—If there be any derangement of the digestive organs, or of any other part or function of the general system, this should be more especially attended to, and removed by the appropriate means, after which the warm bath may be employed with advantage.

The itching may be allayed by some mild application, as Cream, or fresh Olive Oil. The Compound Tincture of Lobelia will likewise allay itching, and prevent the disease from spreading.

When scabs form, the following ointment may be applied:

R. Simple Cerate, 3j,
Compound Ointment of Zinc, 3ij,
Glycerine, 3j. Mix.

In many cases, the Compound Tincture of Hydrastis, will be found preferable—it may be diluted with water, if required.

When a syphilitic taint is suspected, the Compound Syrup of Stillingia should be given, the efficacy of which will be much improved by the addition of half an ounce of Iodide of Potassium to a pint of the syrup.

In debilitated patients, tonics and nourishing diet, are indicated.

Bathing with a solution of salt and water, two or three times daily, has often effected a rapid cure in this disease.

SPECIES IV.—*Rubeola* — *Measles*.

This eruption is very generally confined to children, but not entirely so—it sometimes attacks adults, and when it does, it is more critical in its character, leaving, too generally, as it were by replacement, some other form of disease that may prove very afflicting, if not finally fatal.

In its febrile character, it does not perhaps attack the same individual twice. To the variety of measles under consideration, the Germans apply the term *morbilli*, and the term *rubeola* to a more mild variety of the same disease, or possibly of roseola—in common language, the Germans call it *false measles*, which has been designated *rubeola sine catarrho*, by Willan—the same, or analogous to what we call in this country, *French measles*. An attack of this kind does not secure the constitution against an attack of the other.

It is asserted by some, that *morbillous* fever, i. e., the true rubeolous fever, may occur without being attended or followed by the exantheme eruption, but have the usual catarrhal symptoms, with a perfect immunity from the disease, as indicated by the dermoid eruption, during the subsequent rage of the epidemic.

When we witness the different grades of violence that distinguish different epidemics, we cannot doubt that it is greatly influenced by atmospheric peculiarities; and we may add, almost as a matter of course, that much variety in its manifestation is produced by constitutional peculiarities; indeed, we could not, *a priori*, suppose it to be as severe—as fatal in those of a vigorous vital system, as in those of a contrary character.

Its usual period of incubation is from five to seven days, but in some instances it may be less, and in others it may extend to three weeks, depending upon the impressibility of the system. When produced by inoculation, the eruptive stage very generally appears on the seventh day.

Its usual introduction is that of a catarrhal fever, indicated by creeping chills, alternated with flushes of heat, some redness and soreness of the eyes, with an increased lachrymal secretion, cough, and coryza. It happens sometimes that there are two or three days of febrile excitement, before the

supervention of catarrhal symptoms, but they never fail to occur.

In the beginning, the respiration is apt to be oppressed, the cough dry and harsh, with some soreness in the fauces. The stomach, sometimes, becomes quite irritable, on the second or third day, and may be attended with nausea and vomiting. It is not infrequent for the lymphatic glands of the neck and eyes to become swollen and tender, and when the febrile symptoms run high, delirium may be expected. The skin is hot and dry, and the pulse is quick, hard, and frequent.

CAUSES.—Upon this subject the profession have not agreed, but at present the preponderating opinion is, that rubeola is contagious. In the estimation of those who occupy this position, the success of Home and Hust, in producing the disease by inoculation, seems conclusive. It is admitted by all, however, that it cannot be traced from house to house, nor from street to street, as can be done with small-pox and scarlatina. But is it the case with these?

It is furthermore admitted by all to be epidemic, and so it is with small-pox and scarlatina; but we confess that we are unable to comprehend how a cause can be both contagious and epidemic. The admission of one seems to destroy the possibility of the other, unless it be admitted that all of the so-called contagious forms of disease may be atmospherically produced, and when so produced, have the power of reproducing themselves.

It is a pretty thoroughly-ascertained fact, that small-pox epidemics are generally attended with chicken-pox, and the febrile rubeola by the infebrile varieties. Upon the idea of specific poisons, we cannot account for these facts — to admit that the cause of chicken-pox, if it be a secreted poison, may produce small-pox, is about equivalent to admitting that the cause of gonorrhea may produce syphilis.

We do not, and never have doubted, but that all contagious forms of disease may be atmospherically produced, and we admit that all those that can be propagated by inoculation, are contagious. It has not yet been proved that small-pox, in every instance, resulted from contagion.

DIAGNOSIS.—Rubeola and scarlatina have not always been successfully diagnosticated: indeed, they were regarded as one

and the same a century since—at all events, a diagnosis had not been produced; and still, we cannot see why they should ever be confounded. The catarrhal symptoms of the former, with its small, red spots, and their union into semilunar patches, with intermediate healthy skin, should always distinguish rubeola from the diffused and uniform blush of the latter, more especially when viewed in connection with its exantheme of innumerable, minute, red points, so united together as to resemble a boiled lobster.

PROGNOSIS.—When the patient has good general health, at the time of the attack, and also a strong vital system, the disease is not attended with danger, because the vital force moves on regularly to the elimination of the poison that produced it; but when the vital force is feeble, and more especially if the system be diseased at the time of the assault, the prognosis should be, at least, doubtful.

When the vital force is incapable of maintaining, upon the surface, a febrile action, congestion is sure to happen to some other and possibly more indispensably vital part; hence, among the sequelæ of this disease, we find pneumonia, bronchitis, croup, arachnitis, etc. It is apt, furthermore, to afflict the lymphatic system, more especially in those who possess a scrofulous liability; hence, we have from this cause scrofulous ophthalmia, porriginous eruptions on the head, and tumors about the neck.

INDICATIONS.—Steadily maintain the centrifugal action of the system—guard against revulsion—relax and cleanse the surface—remove all causes of irritation, whether internal or external, and finally, restore nutrition.

TREATMENT.—In a very large proportion of rubeolous cases a pediluvium, an alkaline washing of the skin, and some aromatic tea, as Ginger, Catnip, or Spear-mint, will prove sufficient; but, if in the beginning of the complaint, the patient complains of being cold and having pains in his limbs, the pulse being small and feeble—indicative of congestion, beside the pediluvium and alkaline bath, stimulating teas, as of Virginia Snake-root, Saffron, and even the Compound Tincture of Virginia Snake-root, should be administered; and it would be more agreeable to give them in the aromatic teas first named. If the supervening fever should run high, the

Compound Powder of Ipecacuanha and Opium should be given in appropriate doses, with a free use of warm diluents, and the application of the warm lye-bath every hour or two.

If by this course the oppression is not overcome—and the eruption does not appear, Mustard sinapisms must be applied to the wrists, ankles, and even over the whole abdomen, and allowed to remain until considerable redness of the skin has been produced.

If the condition of the stomach, either because of mucous or other offending matter, or if mucus should clog the respiratory vessels, the Compound Tincture of Lobelia should be given in doses to produce vomiting, or the Acetous Emetic Tincture may be used for a like purpose. Too free emesis should be avoided, except when imperatively required.

If the condition of the bowels be such as to occasion irritation, they should be operated upon by enemas, or some laxative medicine; and under such circumstances it is always best to combine it with some diffusible stimulant, to prevent tenesmus, and to aid in forcing the eruption upon the surface, or if already out, to maintain it there.

But it should always be remembered, that in all cases of inflammation, when the system is acting favorably, that more or less of constipation is established, and it is done as an initiatory step in the establishment of a centrifugal action; consequently no effort should ever be made to move the bowels, in this form of disease, until the eruption is out upon the surface, and even then a purgative action should be carefully avoided.

We are fully satisfied that incomparably more mischief is done, in all branches of the profession, by the use of cathartics, than good. This practice is a remnant of the old humoral pathology. Constipation did not exist before the inception of the poison—when it obtained, it was for the restoration of the patient, and so long as it exists as mere constipation, it should not be disturbed, unless it be for the purpose of revulsion or counter-irritation, and then the good that is hoped to result, will very much depend upon the agent selected.

If it be conceded that disease cannot be cured or removed, except by secretion or depuration, it follows, upon the principle that two supreme or major actions cannot be maintained in the system at the same time, that so long as the bowels are

active but little can be gained by depuration, through the skin or kidneys. Admit this, and the folly of bleeding and purging, to remove disease, becomes too apparent to be tolerated. Our old-school brethren admit that it is dangerous to give cathartics in small-pox—under this admission, how can they justify purgation in any form of inflammation?

The patient's condition, as to his bed, clothing, ventilation, food, and drink, should be such as that recommended in small-pox.

Dr. Eberle says, that this eruption, "as in every other exanthematous affection, must be regarded as an effort of the system to relieve itself from the noxious influence of some internal irritation, by a critical or metastatic deposition on the surface." We regard this as sound doctrine—but observe his inconsistency, when he says, that "all that is usually requisite in such cases, is to keep the bowels in a soluble condition by the employment of mild laxatives." Is not this practice a direct counter-action of the organic law which he has admitted to be correct?

He says, in another place: "A high grade of fever undoubtedly indicates the propriety of moderate venesection." When this is properly interpreted, it means about this: the rubeolous poison has produced a powerful obstruction in the system, and its vital force is making a strong effort to determine it to the surface, or to expel it, and consequently success may be more certainly achieved by removing a part of the force.

Eclectics entertain the opinion that it is best to equalize this vital force, and save it for the purpose of sustaining existence and the depuration of the disease; consequently, instead of bleeding, they make use of diaphoretics, bathing with lye-water, and rubefacients, which answer all purposes, as a general rule, in the treatment of this disease.

Dr. Eberle informs us that Dr. Armstrong advocated the "cautious abstraction of blood in congestive measles;" but he thinks a more prudent method would be to "impart warmth and vigor to the system, and to recall the circulation to the extreme vessels of the surface;" he therefore recommends: "Stimulating frictions to the skin, with Tincture of Capsicum, or flannels wrung out of hot brandy, sinapisms to

the epigastrium, and bottles filled with hot water applied to different parts of the body and extremities, are the means best calculated to procure these ends. Measures of this kind expose the peculiar advantage of exciting the energies of the system (*much better than bleeding*) without diminishing its resources, at the same time that they most efficiently tend to equalize the circulation and remove the congestion. In addition to the above means, we should not neglect the use of warm and gently-stimulating drinks."

In the preceding paragraph, the doctor has written as becomes a medical professor — but how badly it contrasts with his preceding teaching. His treatment, as a whole, clearly shows that he was guided by no rule of action or governing principle; and as the allopathists very generally, perhaps uniformly, teach the same, we are forced to conclude that their practice is nothing else, and nothing less nor more, than learned inconsistency—empiricism—quackery.

A retrocession of the eruption is quite liable to take place with those who have been reduced, in an earlier stage of the disease, by bleeding, purging, etc., and also with those who are naturally feeble—such patients have not the requisite vital force to maintain a centrifugal action in the system. When this event supervenes, tonics and stimulants are required, as Wine, Capsicum, Porter, with Quinia, Hydrastin, and in nervous conditions, Camphor and external friction.

Measles, in those of an unbalanced constitution, are very liable to induce or complicate with other inflammatory forms of disease, the treatment of which will be found under their appropriate heads; but we may add, by way of prophylaxis, rubeolous patients should be particularly careful to avoid, during convalescence, improper exposures of the surface—indeed, prudence in all respects is highly imperative.

SPECIES V.—*Scarlatina* — *Scarlet Fever*.

This is a disease of the skin which is seated in the cuticular surface, and is manifested by a diffusing or spreading inflammation.

If we may be allowed to form an opinion from the evidence that has been furnished us by the profession, it would be, that scarlatina is produced by an atmospherical poison, and that

when produced, it furnishes a poison that will reproduce it; that while the cause of it differs from that of measles, it is mainly governed by the same law.

The period of its most poisonous activity is thought to be that of desquamation, which happens from three to six days after the first impression. Like measles and small-pox, one attack generally destroys the susceptibility of the system to a second assault; we say generally, because some assert that it does sometimes assail, successfully, a second time, while others positively deny it; indeed, it has been maintained by some that they have known it to make a third attack.

Some persons are insusceptible to its impression, as some are to that of small-pox and measles. It has been discovered that those who are, in age, intermediate between that of old age and infancy, are the most liable to it. This may be a general fact, nevertheless it is well known that some epidemics assail children almost exclusively. It observes no particular choice as to season, but is most apt to appear in warm and humid weather, and in such seasons it is most apt to be severe.

Like other epidemics, it betrays considerable variety—sometimes it is very mild; at others, greatly fatal; sometimes it will rage with violence for a time, and then almost disappear, and then return with equal violence in its assaults.

Because of the differences which have been observed in the intensity and character of the disease, it has been divided by nosologists into three varieties: *S. Simplex*, *S. Anginosa*, and *S. Maligna*.

This division has been founded upon the observed facts in the history of the disease, but, as to why or how they exist, has not been explained; therefore we may be allowed to hazard a few suggestions.

With regard to all forms of epidemic disease, some visitations are comparatively mild, while others are as signally fatal. This difference may be referred to a less or a greater elaboration of the poison, or to a difference in the prevailing atmosphere, respectively; but, no matter how mild may be the general character of an epidemic, some cases occur of such malignancy as to destroy life. This difference we must refer to differences of human constitution.

Further, there are some constitutions that possess a vital force capable of successful contention with all causes of disease for a hundred years or more; such persons may have scarlatina simplex, only, and that too, in the rage of the most fatal epidemics. There is a third class which possesses an average constitution, and are, therefore, liable to scarlatina anginosa; and there is a fourth and large class, which manifests, in all the relations of life, a feeble vital force, and they are the subjects of scarlatina maligna.

We were led into this train of thought by the complete fitness that exists between a feeble vital force and the phenomena of scarlatina maligna—a fitness that thoroughly penetrates us with the conviction that these three forms of the disease are founded in the three constitutions above defined; with the exception of those cases, wherein the too general antiphlogistic treatment of a milder form of the disease, has produced a more malignant one, by exhausting the vital force.

VARIETY I.—*Scarlatina Simplex.*

SYMPTOMS.—Between the premonitory manifestations of febrile irritation and the onset of the eruptive fever, there is usually an interval of three or four days. This period is characterized, by an alternation of momentary flushes of heat and slight chills, with nausea, pain in the loins, head, inferior extremities, and a feeling of general depression. The skin is hot and dry, and the pulse is quick and frequent. After a continuance of febrile symptoms for about forty-eight hours, the eruption appears, first upon the face, and then descends, covering the trunk and extremities, and finally working its way into the nostrils and over the buccal surface and fauces, showing itself by a coalescing of innumerable red points that produce a diffused blush upon the cutaneous surface.

There is frequently an enlargement of the papillæ and miliary glands of the skin to such an extent as to give a feeling of roughness to the touch; in other instances, there appears upon the whole surface a scarlet efflorescence.

With or about the beginning of the fever, the patient manifests some difficulty in deglutition, and complains of some soreness of the fauces, with a voice considerably diminished in sonorousness. The extremity and edges of the tongue are

usually red, while a white fur, with the scarlet-colored and enlarged papillæ appearing through it, occupy the balance of it. Considerable restlessness and sometimes delirium attend the evening exacerbations, but they generally disappear before morning. The face is usually somewhat swollen during the presence of the fever, and the pulse, instead of being quick and frequent, is sometimes tense and vigorous. These symptoms continue, with more or less modification, until about the fifth day, when they begin to decline—the eruption, and of course, the fever, diminish, *pari passu*, until they have entirely disappeared, which happens usually about the seventh day.

As the disease subsides, there is one peculiar symptom—a copious and reddish sediment in the urine, and frequently some diarrhea. The process of desquamation, which usually begins on the eighth day, is attended with much itching, and is followed by an equal sensibility of the whole surface.

Authors inform us that there is a considerable abatement of the febrile symptoms upon the appearance of the eruption. To those who regard fever as a disease, this may be information, but to those who regard the eruption as the aim and necessary sequence of successful fever, it would be anticipated. Sometimes the fever is remarkably light, as might be expected in a highly physiological condition of the system, but in other instances, and under a contrary condition of the system, it runs high, thus indicating a pretty strongly-founded condition of the disease.

VARIETY II.—*Scarlatina Anginosa*.

This variety is more severe in its whole character, more particularly in its anginose affection, than the preceding. It is usually attended with considerable præcordial oppression, nausea, headache, muscular prostration, and occasional vomiting during the introductory stage. The febrile action is developed with much rapidity, the pulse becoming very quick and frequent, but has less tension, vigor, and fullness, than the preceding variety. Deglutition becomes painful, a feeling of esophageal stricture is experienced in respiration; the fauces, palate, tonsils, and uvula become red and slightly tumid; and a sense of stiffness, with a dull pain, seizes the cervical

muscles and those under the ears and about the angles of the jaws; the skin is said to be more intensely hot than in any other febrile affection, and is attended by a corresponding degree of thirst. The whole course of the disease is marked by unusual languor, restlessness, and prostration; the tongue is dry, its edges are florid and projecting, and highly-inflamed papillæ cover its surface.

In this variety the vital force is less effective than in the former, and consequently the eruption does not usually appear before the third day of the fever; and when it does appear, it is neither so regular nor so generally diffused, showing itself on different parts of the body, particularly about the elbows. The rash sometimes disappears, and probably the day after its appearance, and by the next day returns, but this mutation is governed by no regularity—it shows only that the system is struggling to effect a permanent reaction.

If the disease manifests a declension by the fourth or fifth day, the inflammation of the fauces usually passes off by resolution; but when the symptoms are violent and are protracted beyond the time above specified, ulcers are formed about the tonsils and palate, which rapidly pass into ash-colored superficial sloughs; at the same time mucus may be secreted in the fauces and concrete into flakes, which, without care, may be mistaken for sloughs.

As the fever subsides, which happens about the eighth day, the sloughs separate, leaving ulcerated surfaces that readily cicatrize, unless the separation is procrastinated beyond the eighth day, in which event it is common for them to enlarge, become of a brown color, and throw out an acrid and sanious fluid, attended by a hard, painful, and swollen condition of the cervical glands, diarrhea, and possibly tenesmus.

VARIETY III.—*Scarlatina Maligna*.

Between the most inflammatory and unmanageable form of scarlatina anginosa, and that of which we are about to treat, the differences may be considered to exist in degree rather than in kind. In malignant scarlatina, the febrile manifestation very early in its history assumes a typhoid character: in scarlatina anginosa, there is a pretty general equality between the constitutional symptoms and the local mischief; but in

this, the speedy death that supervenes cannot be explained by the extent of the local lesions.

Its introduction may resemble scarlatina anginosa, but the mask is soon removed by the dangerous character of the symptoms that supervene. No certain periods are observed for the appearance of the eruption, but it usually appears between the second and fourth day. No definite period can be assigned for its duration; when it appears it may continue a few hours, and then appear after two or three days, but upon different parts of the body. By the second day, the pulse passes from activity to smallness and feebleness; the skin does not become particularly hot—delirium appears early in the disease, and with occasional intermissions and exacerbations continues throughout the disease.

In the most aggravated cases, a livid flush covers the cheeks, and the eyes appear dull and inflamed—the breath is fetid, and the tongue is dry and covered with a dark-brown fur—gray-colored sloughs appear on the soft palate, in the fauces, and tonsils, which soon become of a dark color; but before the arrival of these symptoms, death frequently relieves the patient by the infliction of some cerebral outrage.

It but rarely happens, that when the fever is not protracted beyond the fourth day, that the ulcers become fetid, black, and ill-conditioned sloughs.

If the disease has shown itself to be particularly malignant, about the middle of the second week, collapse, manifested by a great prostration of the vital force, as a frequent and feeble pulse, a low condition of the cutaneous caloric, exhausting hemorrhages, or diarrheas, dark-brown or black tongue, and the appearance of petechiæ, may be expected. In some instances, the vital force proves entirely insufficient to force the eruption upon the surface during the existence of the disease.

Dr. Armstrong has divided scarlatina maligna into three sub-varieties, the *inflammatory*, *congestive*, and *mixed*. The first is indicated by a full, hard, and vigorous pulse, early delirium, and very hot skin. In this stage it differs nothing from scarlatina anginosa, but runs speedily into collapse, the eruption appears early and vividly red, but in a short time it acquires a dark purple hue—the vital force is soon expended, and petechiæ, colliquative diarrhea, and passive hemorrhage

ensue. This form of the disease is better known by the name of "*putrid sore-throat*."

A complete overwhelming or overpowering of the vital force, by congestion, indicates the second or *congestive* variety. The patient feels oppressed, disposed to syncope, complains of giddiness, weight in the head, nausea, oppression in the præcordia, and deep-seated pain, if of any at all, and a pale skin. Diarrhea, petechiæ, gangrenous spots, and exhausting hemorrhages from the nose, mouth, or bowels, precede dissolution, which is but rarely procrastinated beyond two or three days.

The third variety can readily be inferred from the two preceding, and therefore no description of it is necessary.

SEQUELÆ.—Anasarca is, probably, the most frequent sequelæ of this disease—it generally appears in eight or ten days after the termination of the disease, and continues two or three weeks; but sometimes, it is said, invades the chest and even the brain and thus proves fatal.

Occasionally it causes gutta serena, rheumatism, eruptions of the derma, neuralgia, hysteria, asthma, chorea, inflammation of the testicles, tonsillar abscesses, tumefaction of the parotids, deafness, ophthalmia, otitis, excoriations about the nates, suppuration of the cervical glands, cough, hectic fever, inflammation of the mucous lining of the bowels, etc.

CAUSES.—All, and perhaps more than we know of this disease, is embraced in our leading remarks.

DIAGNOSIS.—When treating of rubeola, we gave the diagnostic differences between it and scarlatina, and the only other eruption with which it can be confounded is miliary fever, and this can only happen with superficial observers. The miliary eruption is generally attended with considerable perspiration, which is not the case with scarlatina. The eruption of miliary fever seems to be seated on a skin which preserves its natural color.

PROGNOSIS.—This disease is divisible, as we have shown, into three pretty strongly-marked varieties, and each of these is attended with several modifications, consequently, the prognosis must be attended with as many qualifications. This is not all, the general character of the prevailing epidemic must be taken into consideration.

We may say, however, with reference to scarlatina simplex, that, under judicious treatment, its prognosis may be considered as generally favorable; as regards scarlatina anginosa, where the contending forces are pretty nearly balanced, that a judicious treatment may be expected to produce a favorable preponderance, and consequently the fatality which has generally attended it, is not justified by its pathological conditions. In the third variety, there is no equality in the forces—those of an inimical character greatly preponderate—it is pregnant with the most obvious indications of an inherent deficiency of the vital force, and hence no treatment should be expected to achieve more than a mitigation of its violence, and a brief procrastination of the necessarily fatal termination that attends a large majority of its assaults.

INDICATIONS.—The indications in scarlatina are the same as in measles, particularly in its milder forms; but its more malignant peculiarities demand more energetic treatment—to effect and maintain a centrifugal action must be the leading principle.

TREATMENT.—There is no fitness or proper relation between the symptoms of this disease and the mortality that attends the general practice. If in this opinion we are correct, then the practice must consist too much in a war upon the vital force—upon the fever and inflammation instead of the disease. The accuracy of our opinion is sustained, if we mistake not, by the success of the homœopathic treatment, which, in our judgment, is about equivalent to none at all. None at all, then, is better than that which generally prevails.

Prof. Wood says, that “in the vast majority of cases, scarlet fever would end favorably without treatment; hence the reputation acquired by homœopathy in this disease.”

Under this view of the subject, what should we think of the practice of those physicians who lose a “vast majority” of their scarlet fever patients? We know a few who are thus unfortunate, and yet they have the presumption to call a more fortunate class “quacks.” We are very much mistaken if Prof. Wood, himself, would not have greater success if he would practice the bread-pill system, which is less than homœopathy, than the one he recommends. If our unfortunate physicians make him their guide, we are not surprised

at the fatality of their practice. He teaches, that in all cases, except those of "great mildness, it will be proper, in children, to follow the emetic with a purgative dose of Calomel, which, if it do not operate *thoroughly* in six or seven hours, should in its turn be followed by Castor Oil, Magnesia, or one of the saline laxatives. Afterward, the bowels should be kept open, if necessary, by cathartics, which should be accommodated to the circumstances of the case; those of a depletory character, such as Sulphate of Magnesia, being given if there is much excitement with considerable energy of the system." In another place, he states, that "the practitioner should always be on his guard for symptoms of debility." Are we to infer that he prescribes Calomel purges as a means of guarding against debility?

For the practice of Eberle, Watson, and Armstrong, our opinion is about that which we have above expressed concerning that of Prof. Wood. As these four writers measurably lead the profession, we have no occasion of surprise at the fatality that attends this form of disease.

Among the local remedies, is that of inunction, upon which we desire to offer some comment. It consists in greasing the whole surface, with the exception of the face and scalp, with a piece of fat bacon every morning and evening. Of this practice, Dr. Schneeman, of Hanover, speaks in flattering terms. We have never tried it, and from the ill-success of those whom we know to use it, we think it much inferior to homœopathy. As a means of counter-irritation in visceral inflammation we think favorably of it, but when applied to an inflamed surface, we are disposed, *a priori*, to think as badly of it, as of blisters to the scalp in encephalitis.

We have stated that the leading and principal indication is the maintenance of a steady and constant determination to the surface; and, if this principle be correct, purgation of any kind must be, in the highest degree, incompatible. Nothing, except the most clearly-manifested alvine irritation, can justify the use of the simplest laxative. Under a highly vital manifestation of the disease, simple enemas may be used, if required by indications of alvine irritation, and under depression of the vital energies stimulating ones may be used to

evacuate the large intestines, and to promote revulsion or a centrifugal action.

The treatment we have laid down for measles, is all that is required for scarlatina simplex.

In the anginose form, prompt efforts should be made to reduce the fever, by equalizing the circulation and the promotion of secretion, which may be effected by the administration of a mild vegetable emetic, that should be repeated daily for two or three days in succession; the Acetous Emetic Tincture will be found useful for this purpose.

After the action of the emetic, the body should be bathed with a weak, warm lye-water, followed by the spirit vapor-bath, in adults, and the free use of the infusion of some of the simple vegetable diaphoretics, as Catnip, Balm, Sage, etc.

In using the lye-bath, its temperature must be regulated by that of the body; if this be not above the natural temperature, the bath must be merely bloodwarm. The more severe or malignant the disease, the oftener must the bathing be repeated, even to every hour.

Our next duty will be to induce the deep-seated inflammation of the neck to the surface, for which purpose the throat and neck should be bathed with the Camphorated Soap Liniment, or the Compound Stillingia Liniment; this should be repeated three or four times daily, applying after each bathing a warm fomentation of Hops and Wormwood, or a Slippery elm poultice.

The fever being so far reduced as to admit of secretion, our attention should, in an especial manner, be directed to the kidneys—depuration through them is, perhaps, indispensable to the cure of this form of disease. An infusion of equal parts of the root of *Althæa Officinalis* and *Apium Petroselinum* may be drank freely, and will prove as effectual in fulfilling this indication as any other diuretic we can employ.

Scarlatina maligna is but scarlatina in a constitution highly feeble and vitiated. The anginose form, we have no doubt, is very frequently forced into the malignant by allopathic purgation. By such a practice the vital force is so reduced that it cannot contend successfully with the disease, and death takes place through mortification—not inflammation.

The pains and sensations of heaviness—the anxious expression of the countenance, and withal, the alternate chills and heats, indicate a congested condition of the system; the vital force is inadequate to a successful revulsion, and the morbus settles upon the throat, and that too without much delay. The inside of the throat becomes florid or crimson-colored—spreading rapidly, it soon becomes covered with whitish spots that mark the beginning of the ulcers.

In the malignant form of scarlatina, the treatment above-named must be energetically persevered in. For the ulcerations of the throat, a wash or gargle must be employed, and used several times a day, composed of:

R. Black Pepper, ʒi,

Salt, ʒj,

Boiling decoction of Hydrastis Can., fʒiv.

Mix, and allow it to stand fifteen minutes; then add,

Vinegar, fʒiv.

With this, the mouth and throat must frequently be washed with a swab, or gargled, and a child two years old may swallow a teaspoonful of it several times a day, or in proportion to its age.

When the low typhoid symptoms appear, as frequent and small pulse, dry and cracked tongue, sordes upon the teeth, jactitation, muttering delirium, etc., stimulants and tonics must be resorted to, with generous, nourishing, and easily-digested food. For tonics and stimulants the agents may be employed which have been heretofore advised for a similar purpose in the treatment for laryngitis.

The room of the patient must be kept well ventilated, and his clothing should be changed often.

GENUS II.—PAPULÆ.

This genus consists of eruptions which are marked by small, hard, resisting, acuminate, and unsecreting elevations of the cuticle, attended with a more intense itching than any other genus, and terminates usually in scurf. Dermatologists describe three species: Strophulus, Lichen, and Prurigo—neither of which is contagious.

SPECIES I.—*Strophulus*.

This is a disease of infancy, and it consists of pimples, which are usually red, but they are occasionally whiter than the healthy skin—they may occur on a part, or they may appear over the entire surface of the body. They rarely give rise to any constitutional symptoms, but they exceedingly annoy the little patient by the itching they produce, with some increase of cutaneous temperature. Their termination is by resolution and desquamation. It consists of five varieties: *Strophulus Intertinctus*, *S. Confertus*, *S. Volaticus*, *S. Albidus*, and *S. Candidus*.

VARIETY I.—*Strophulus Intertinctus*, or *Red-Gum*.

This eruption consists of prominent and vividly-red pimples, dispersed generally over the body, or only over several portions of it, in erythematous patches, and covered with small, red points. It more frequently attacks the backs of the hands, the forearms, and cheeks. Its introduction is sometimes preceded by nausea and vomiting, or possibly by diarrhea.

Prof. Dewees says, that “most nurses are very fond of it, so much so, indeed, and so invaluable and useful do they consider its presence, that should indisposition befall the child, and this eruption not have possession of the skin, it is at once attributed to the absence of the gum.” They then resort to means to produce it, such as warm clothing, heating teas, etc.

It is no doubt true, that so long as the infant is in possession of this disease, it will be little liable to any other, but the same argument is as applicable to any other disease; the possession of one usually precludes every other. But this fact can furnish no argument favorable to its retention or introduction. It is most probably symptomatic and vicarious in its purpose.

VARIETY II.—*Strophulus Confertus*, or *Tooth-Rash*.

This eruption usually appears upon infants about the fourth or fifth month, but it may occur at any time during dentition. The pimples are of smaller size and more numerous than in the preceding variety, and also more aggregated into patches,

which are sometimes confluent. It most generally attacks the cheeks and side of the nose, or it may appear on the arms and forehead, and, if more than ordinarily violent, it may possess the entire surface.

When of such violence, it is attended with much pain and itching, and sometimes excoriation, more particularly when it is seated upon the thighs or inferior portion of the body. It is less vividly red, more painful, and more lasting than the previous variety. In two weeks it usually attains its height and then declines with a copious furfuraceous desquamation of the epiderma.

On its decline, it is frequently succeeded by another eruption, which Willan describes as attacking infants of seven or eight months. It appears in one or several large, irregular patches of pimples upon the arm, leg or some other part of the body and extends upward and downward.

The intermediate skin, as well as the patches, is of a deep-red color, and after the epidermal exfoliation, in which they result, the skin is left of a dull, dark-red color, dry and harsh.

When it visits the legs, it generally becomes painful and most obstinately forces its way to the thighs, and in many instances to the loins and abdomen. The epiderma is apt to crack and separate in large flakes, leaving the derma rough and inflamed. It is frequently continued for several months, and even to the close of the first year, and attended all the time by much heat and irritation.

VARIETY III.—*Strophulus Volaticus*.

This variety usually betrays itself upon the arms or cheeks, in small, circular, bright-red patches or clusters, varying in number from three to a dozen papulæ in each. Sometimes these patches appear in succession upon different parts of the body; and in some instances they have been observed to disappear, and then to be quickly replaced, at a little distance, with another, and in this wise to spread over the entire surface.

The patches and thin interstices have a highly-inflammatory color, and are attended by an increased temperature, a quick pulse, a white tongue, and an irritable disposition.

In most instances, the inflammatory condition subsides in a

few days—the papulæ become of a brownish tint, in a desquamation of the epidermis.

VARIETY IV.—*Strophulus Albidus*.

This cutaneous affection, consisting of a pale or whitish eruption, is very mild in its character—very rarely attended with any constitutional symptoms, and hence, as seldom requiring medical attention.

It is readily distinguished from the other varieties by the hardness, smallness, and dryness of the papulæ, which are but slightly elevated, and cast, as it were, upon a mild-red ground, and in great numbers upon the face, neck and breast. It continues for a considerable time, and though very mild, its repulsion produces sometimes dangerous symptoms.

VARIETY V.—*Strophulus Candidus*.

This eruption is said to appear about the close of dentition with children, and to be also a consequent upon convalescence from fevers, and also inflammations of the intestines and lungs.

Its papulæ are of larger size and broader than in the preceding forms; they are but sparsely scattered over the loins, arms, and shoulders; they are hard and smooth, but attended with so little inflammation that, in consequence of their smoothness and brightness, they appear to be less colored than the adjacent skin. They usually continue hard, tense, and elevated for six or seven days, and then disappear.

CAUSES.—This species, and all of its varieties, are considered to depend upon, or originate in, the deciduous dentition, and are therefore called *tooth rashes*.

Upon this subject, Professor Dewees says, that “nothing declares the intimate connection, or play of sympathies between the gums and skin, during dentition, more than the number of eruptions to which it becomes liable at that period.”

Against such an opinion as this, we have much to say, if time and place permitted—it is a part, a fragment of that doctrine that inculcates the plurality of disease—a fragment of that doctrine which leads, in practice, to a contention with symptoms, instead of the disease which they indicate.

The dental process is just as normal — as physiological, as the cerebral, muscular, or osseous; and its period of development is that of all, and if all the others progressed physiologically, we would have nothing to fear from it. The difference is, that it becomes the organ of complaint for that defective nutrition and consequent development or feeble condition of the vital force, which is characteristic of all such cases. The sympathy, then, is not between the gums and the skin, but between the latter and the system of nutrition.

In treating of *strophulus intertinctus*, he makes its cause to be entirely independent of any condition of the teeth or gums. He says: "This derangement may proceed (1st.) from the meconium not having been well purged off, or its being of an unusually acrid quality; (2d.) it may proceed from an acrid state of the stomach, owing to feeding the child with improper food, or to its being made to receive too great a quantity of it; to some ill quality in the mother's milk, or a constitutional feebleness of the stomach," etc.

If these remarks be true, and we are ready to admit that they are, he has thoroughly sustained our conclusion. There is too much similitude between the several varieties of *strophulus* to make them symptomatic of entirely different forms of disease. Such a pathology as would attribute one member of this family to such causes as we have above specified, and at a period, too, long antecedent to the existence of any dental irritation, can never lead to anything else than empirical practice.

If we consider the remote cause of these eruptions to be the disease—an inability of the nutritive system to discharge its duties, physiologically, all the members of this family are accounted for by differences of age and other attending circumstances.

Dr. Wilson says, that "*Strophulus* is generally due to gastric and intestinal irritation, and is frequently associated with the constitutional disturbance *induced by dentition*." Dentition induces none—that which is in the system is only manifested through it.

DIAGNOSIS.—The period of life in which this family appears is generally sufficient to distinguish them from all others. If lichen occurred at so early a period, it would be difficult, if

not impossible, at least in many instances, to diagnosticate them.

PROGNOSIS.—If we speak of these eruptions as so many forms of disease, then the prognosis is favorable—for, instead of being attended with danger, they rarely present features of severity; but of that constitutional weakness, of which we regard them as symptomatic, very many children die.

INDICATIONS.—Remove all causes of irritation, and promote cutaneous and renal depuration.

TREATMENT.—Cleanse the surface with the alkaline wash, and if the child possess a respectable share of vital force, a simple enema and mild aromatic teas will usually be sufficient, aided by decoctions or infusions of some of the vegetable diuretics.

But if it be feeble, and re-action effected with difficulty, the enemata and drinks should be stimulating; and alteratives and tonics may be given with benefit; the Compound Syrup of Yellow Dock will be found to fulfill both indications.

In some instances it will be judicious to administer mild emetics, especially when much mucus appears to abound in the stomach; and the bowels should always be kept open by mild aperients.

The diet should be nutritious and easy of digestion.

SPECIES II.—*Lichen*.

This eruption consists of elevated, acuminate papulæ or pimples, which are small, hard, and solid, and grouped together upon particular portions of the cutaneous surface, or distributed over the whole body, and attended with a troublesome sense of tingling, itching, and pricking. It is common to children of eight or nine years of age and to adults. It is not necessarily attended with constitutional symptoms.

Of this species there are three varieties which interest us: *Lichen Simplex*, *L. Agrius*, and *L. Urticatus*.

VARIETY I.—*Lichen Simplex*.

This form of disease appears usually on the face and arms, but may extend to the neck and breast, and indeed to nearly all parts of the body. It appears in small, red, distinct, conical, and hard pimples, or papules, more or less grouped, with

an inflamed base, and attended with various degrees of heat, itching, and tingling; its duration is from one to several weeks, or even months, but such an extension of it is occasioned by successive crops of the eruption.

After the attack, it appears to continue stationary for several days, and then declination begins and terminates in one or two weeks in a slight scurf, when the disease is of a simple or mild form.

When the erupted parts have been exposed to abrading forces, the papillæ will frequently be found wearing bloody scabs on their surfaces.

In chronic cases, the skin has, to the eye, quite a normal appearance, but the passage of the finger over the part will detect the eruption. This form is usually attended with more desquamation than the acute, and the skin, also, becomes thicker and less pliant.

In the heat of summer, this disease is called *prickly heat*, by the unlearned, and by the learned, *lichen tropicus*. In tropical latitudes, it is much more severe than in the temperate; but in any latitude it is a harassing disease—producing an uncontrollable disposition to scratch.

In numerous instances, it is attended by no constitutional symptoms, and yet, in some, it is preceded by fever, and other evidences of internal disorder.

VARIETY II.—*Lichen Agrius*.

This variety attacks, preferably, the outside of the limbs, and in this wise differs from eczema, to which, in some respects, it bears a resemblance. It commences with fever, which, upon the appearance of the eruption, generally, but not uniformly, subsides. To the tingling and itching sensation, common to lichen, is added, in this form, burning and smarting, which are greatly augmented by heat and by everything else that can excite or irritate the skin.

The eruption consists of numerous small, red, inflamed papillæ, which are clustered upon large areas, and surrounded, often to a considerable extent, by an erythematous redness of the skin. Sometimes small vesicles are intermingled with the papules; their occurrence, however, is a mere circumstance, as they soon disappear.

This form of disease is usually marked by remissions in the morning and exacerbations in the evening. After the existence of the pimples for some days, an excoriation or ulceration commences, which throws out a sero-purulent fluid that forms into scabs.

This circumstance is a considerable violation of the definition of lichen—a proof that all classification is more or less arbitrary. To the scabs, however, succeed minute furfuraeous scales, which may terminate the disease.

Two weeks, or a little less, is the usual period of the disease, but sometimes, after the disappearance of the scabs, the surface continues moist, and the departed scales are replaced by others, or the eruption may entirely disappear, and yet, in a short time, re-appear—in this wise the disease may be protracted for several weeks. The passage of the disease through these several modifications leaves the skin chapped, thickened, and tender.

VARIETY III.—*Lichen Urticatus*.

In this variety of lichen the papulæ possess more magnitude than is common to the other varieties. The papules are clustered, and they are either white or surrounded by a faint-red areola; sometimes they are prominent and considerably inflamed, and at first bear considerable resemblance to flea bites. The suddenness with which they appear and disappear constitutes a remarkable peculiarity in this disease. Very frequently, they are attended with a burning heat and pungent itching, and when scratched, they bleed and form black crusts upon their summits. It is peculiarly obstinate, being maintained indefinitely by succeeding crops of the papules—thus desquamation and reproduction may, *pari passu*, progress for months.

CAUSES.—Children of sanguine and sanguine-lymphatic constitutions are the most liable to these eruptions, and they are more liable to occur in spring and summer than in winter, but the latter season is by no means exempt from them.

We have no doubt but that they are produced by too much feeding, or food of improper qualities, and deficient exercise. The last variety has been excited into development in children by mental emotion—as a little ill-humor. When that consti-

tutional condition exists, which seeks relief by these eruptions, they are easily produced, as slight friction, rough clothing, stimulating drinks or food, etc.

DIAGNOSIS.—Lichen is distinguishable from scabies by the dryness and hardness of its eruption, and by a difference of locality—being found generally upon the thick skin, and not upon the thin, as in scabies.

It is distinguishable from herpes, by the dryness of the former and the moist and vesicular character of the latter; furthermore, the skin, in the former, is thicker and more harsh.

From prurigo, it is not so easy to distinguish it; both are sometimes found upon the same individual, and that too, at the same time; and further, they are species of the same genus, and it is even thought by some that prurigo sometimes degenerates into lichen.

In general, however, the larger and flatter papules of the former, especially as they are of the common color of the skin, will distinguish it from the smaller and more acuminate papules of lichen, especially as they have more color, and are more grouped into clusters.

From urticaria, or nettle-rash, lichen is distinguishable by its more permanent or chronic character;—but in confounding them no mischief can result.

PROGNOSIS.—Lichen cannot be charged with being dangerous, but it is obstinate and tormenting, and the longer it exists the more these traits of its character increase. It has sometimes proved entirely intractable.

INDICATIONS.—Regulate the secretions and restore the digestive functions.

TREATMENT.—When the habit of body is full, the diet should be simple and unstimulating. The large intestines should be maintained in a normal condition by the use of enemata—simply cold water will be best, if sufficient.

The skin should be maintained, as far as practicable, in a depurating condition by the frequent use of alkaline washings. These washings, furthermore, may be sufficient to allay the pruritus, which is peculiarly tormenting in this malady; but in the event they fail or are insufficient, Acetic Acid and water

may be tried. This eruption is one in which a proper diuresis should not be neglected.

When the disease has become chronic, although the skin may be inflamed, Dr. Wilson recommends an ointment to be rubbed upon the skin, containing half a drachm of Croton Oil to two ounces of Ceratum Cetacei, and then, after three, four, or five days, to relieve the irritation occasioned by the Croton Oil, he prescribes an oleaginous cerate containing Liquor Plumbi, and then, at the termination of another similar period, he prescribes a lotion of Tannin of the strength of two drachms to a pint. The constitutional treatment, at the same time, consisted in taking four pills daily, containing twelve grains of Tannin, with Extractum Rhei and Extractum Hyoscyami.

Under circumstances of anemia, he relies much, in the treatment of this affection, upon the mineral acids and the bitter infusions.

SPECIES III.—*Prurigo*—*Pruritus*—*Old Man's Itch*.

This species is made, by dermatologists, to embrace some half a dozen varieties, but that which is known as *prurigo infantilis*, is the only one that interests us. All the varieties so closely resemble lichen, that it is generally difficult to make out a satisfactory diagnosis.

The seats of the disease are generally the neck, shoulders, back, and extensor surfaces of the extremities. It is more confined to one spot, and more disposed to attack several spots simultaneously than lichen. It may be local or general, simple or complicated with affections of the skin, but more particularly with lichen and psora. Its complication with psora is rather an unexplainable circumstance.

The papulæ are so generally colorless, or so nearly so, as not to be generally observed, the only external appearance that exists to call attention to them are the black scabs or concretions of blood which were drawn by scratching, to which the sufferer is impelled by the sensation of extreme itching; to which, in severe cases, is added a feeling of formication and painful pricking.

These sensations are almost constant and always increased

by heat or exposures to cold. Like lichen, it is not contagious.

For its causes, diagnosis, prognosis, and treatment, we may refer to the preceding species, as we can add nothing of moment here. We may add, however, a few remarks from Billard.

In the treatment of one case, which was cured, he says, the "child was immersed in a decoction of Marsh Mallows, and the limbs and body anointed with Oil of Sweet Almonds, carefully covering up the hands and arms. Rice-water, sweetened with the Syrup of Marsh Mallows, was administered internally, and milk-and-water was given for nourishment."

In the way of general instruction, he further remarks: "In general prurigo, emollient, saponaceous, or sulphurous baths, demulcent or slightly-acidulated drinks, constitute the treatment. In local prurigo, it will be necessary to apply emollient, sulphurous, or alkaline lotions alternately to the diseased parts. Gelatino-sulphurous douches have been employed with success. The greatest care should be used to accomplish the early removal of the prurigo that is developed around the vulva or anus in children advanced in age, because the excessive itching of these parts, compelling the child to scratch them constantly, they may thereby continue in a state of erythism, and of irritation, extremely prejudicial to their health."

Dr. Wilson says that the Milk of Sulphur in moderate doses, night and morning, for two or three weeks, is sometimes useful with children. He has also presented us with a number of formulæ, from the French dermatologists, for ointments.

For local prurigo :

℞. Muriate of Ammonia, 3i,
Powder of White Hellebore, 3ss,
Lard, 3iij. Mix.

℞. Hydrate of Lime, 3ji,
Subcarbonate of Soda,
Laudanum, āā 3ss,
Lard, 3j.

R. Laudanum,
 Sublimed Sulphur, āā 3ss,
 Oxide of Zinc, 3j,
 Oil of Almonds, 3j,
 Lard, 3iij. M.

GENUS III. — SQUAMÆ.

The eruptions included in this genus are characterized by the formation of scabs, without having been preceded by other elementary forms, common to cutaneous eruptions, such as vesicle and pustule. An abnormal and highly-increased production of the epidermis produces the scabs which distinguish this genus.

There may or may not be an elevation of the cutis in their formation. When elevations occur and the scabs are removed, the skin is discovered to be red and inflamed.

Some authors include in this genus four species, Pityriasis, Psoriasis, Ichthyosis, and Lepra. As the last is a stranger in this country, we shall pass it by.

SPECIES I.—*Pityriasis*.

Dermatologists have divided this species into some dozen varieties, but as the differences between them are but slight, there is nothing to be gained, therapeutically, by a separate consideration of them.

This affection is sometimes quite generally distributed over the surface, and the patches are frequently successive in their appearance; at other times, it is confined to some particular spot, as the head, where it may remain without any disposition to spread. Neither sex nor age is exempt from it. The squamæ appear in patches of very irregular shape and size, slightly inflamed, and attended with a constant exfoliation of the epidermis in the form of semi-transparent scales or whitish scurf.

When this affection is located upon the head, it is called *pityriasis capitis*, and occasions a copious production of dandruff. It is attended with frequent and troublesome itching, and when the scabs are removed, the skin is seen to be of a slight redness. On the scalp the scales are large, thick,

and flat, but they are quite light on the temples, chin, and forehead.

When it occurs at the junction of the skin and mucous membranes, it is always more troublesome than when otherwise located. In most instances, as it usually occurs, the skin is slightly elevated, and of a light rose-red color. When it attacks the palms of the hands and the feet, between the toes, it is peculiarly troublesome.

CAUSES.—These are regarded as being peculiarly obscure. We are disposed to believe that it is frequently caused, remotely, by an imperfect or feeble pulmonary function. We have, in another place, shown that obesity depends upon this cause; and having seen this disease confined to those who were organically disposed to be obese, and to those who were phthisically liable, and from the great amount of carbon contained in epidermoid matter, we have been induced to make the above suggestion.

Strong mental emotions are said to have produced it in adults. This fact, if such it be, is favorable to our suggestion, because the full chested are those who suffer, most generally, from strong mental emotions. The liability of old people to this disease, is another strong circumstance favorable to our opinion.

DIAGNOSIS.—The vesicular and pustular diseases are all moist, this is dry; its fine scales and slightly-elevated surface distinguish it from psoriasis, with its large, shining scales, inflamed and elevated base.

PROGNOSIS.—As regards life, it is never dangerous, but with the aged it can never be cured—with the young it may be, by a proper attention to food and exercise.

TREATMENT.—In pityriasis, we would recommend the bathing of the surface of the body with fresh Olive Oil, two or three times a day, for several days in succession, to be followed by a spirit vapor-bath, in adults, or a warm alkaline bath, in children—and this treatment should be persevered in for several weeks after an apparent cure has been effected.

Internally, the use of the Compound Syrup of Yellow Dock, with Iodide of Potassium, four drachms to a pint of the syrup, must be prescribed, together with an attention to diet, avoiding all vegetable acids, fats, liquors, stimulants, and indigestible

substances. The bowels must be held in a regular condition, and exercise be taken daily, adapted to the ability of the patient

SPECIES II.—*Psoriasis*.

This affection is marked by scaly patches, which are irregularly circular, of a red color, and at first small and projecting. The papulous elevations are frequently not larger than a pin's head, and have their summits speedily covered with a slight scab. They enlarge and rise, but their borders are never prominent, nor their centers depressed. They multiply promptly, many of them breaking out at the same time, and often become confounded with one another. They appear on different parts of the body, but more particularly on the face, trunk, and head.

When they are divested of their scales, either spontaneously or mechanically, as by scratching, they present a red and slightly-elevated surface. In this condition, they are quite painful, but this does not continue long, for they are speedily re-covered with scales. The spaces which separate the patches are of various extent and surrounded by an inflamed border.

When the patches are considerably elongated and have a spiral direction, they are called *psoriasis gyrata*; when the patches spread and coalesce, they are called *psoriasis diffusa*; and when the disease has continued for many months or for years, it is then denominated *psoriasis inveterata*.

In this form of the disease, the skin is said to resemble the bark of trees covered with lichens. When it occurs in infants, it is called *psoriasis infantilis*, which does not differ from *psoriasis diffusa*, except that it is more acute and rapid in its course, with a liability, it is said, of causing deep fissures in the diseased skin, which occasion much suffering.

Beside the preceding, many other varieties are enumerated, which have not sufficient importance to claim our attention.

CAUSES.—That condition of the system, of which pityriasis is symptomatic, we suppose to be, also, the cause of psoriasis, under modifying influences. It is said to be more common to females, than males, and it is often "evidently hereditary."

DIAGNOSIS.—It is distinguishable from all other cutaneous affections, by the dryness of its eruptions, its salient patches,

thickened and inflamed skin, the elevated centers of the patches, their inflamed shape and size, and their covering of scales.

TREATMENT.—In this affection, the warm bath must be used daily, and the following ointment applied locally :

R. Benzoic Acid, ʒij,
Spirits of Turpentine, gtts. xx,
Camphor, grs. x,
Lard, ʒj. Mix;

or, if symptoms of irritation or inflammation are present, the Compound Ointment of Zinc will be found highly serviceable.

The internal treatment should consist of alteratives and diuretics, as the Compound Syrup of Yellow Dock and Iodide of Potassium, as heretofore named—the bowels kept regular, with a strict attention to diet and regimen—the same as referred to in the treatment of pityriasis.

SPECIES III.—*Ichthyosis*.

The supposed incurability of this disease gives it a greater physiological than pathological importance, but darkness still envelops it in both respects, and should it ever be found, we predict that it will be to serve a vicarious purpose—the elimination of carbon from the system.

Its appearance in infancy, and that of adult age, presents a great difference, and yet it is one of degree, rather than one of kind. In infancy, it is liable to be mistaken for that epidermic exfoliation which is natural to infancy, a few days after birth. It is considered to be, most generally, a congenital and hereditary disease, which may, and usually does, continue for life.

It is essentially a disease of the epidermis, and appears in patches of a dirty-gray color, and separated from each other by lines which are superficial and irregular. When detached, the epidermis beneath is discovered to be thickened, and to impart to the touch a harsh feeling. The health does not appear to be affected by it, and the skin does not appear to be inflamed when the scales are removed.

The thickened condition of the epidermis, its continual reproduction, the form and appearance of the patches, and the obstinacy of the malady, will distinguish it from that epidermic

exfoliation which is common to infancy, and also from all other cutaneous affections, which American physicians will probably see.

No particular or specific remedy has yet been discovered for this malady—so far as is now known, its treatment must consist in observing a proper course of diet, exercise, and tepid baths. Willan recommended the use of tar and pitch water, and as no better remedy has been discovered, this still continues to be in use. Alkaline baths soften the scales so that they can be readily removed, and then stimulant applications are said to have cured recent cases. One of the best agents for exhibition in this peculiar disease, is *Stillingia Sylvatica*, or *Stillingin*. Perhaps the following is a very convenient form for its exhibition:

℞ Concent. Syrup of *Stillingia*, gtts. v,
 Iodide Potassium, gr. ii,
 Mel., f. ʒss.

This may be given three times daily, for a considerable time, when, if no improvement is seen, the prescription should be changed, always employing alteratives.

CLASS VI.

MANIFESTATIONS OF DISEASE IN THE CELLULAR TISSUE

INTRODUCTION.

A MERE perception of the non-inflammatory affections of the cellular tissue appears to be attended by a momentary impression of incomprehensibility, which results from the fact, that we do not witness an obvious and—a visible cause. When we see destruction succeeding, in point of time, inflammatory action, the momentary impression is that the latter is the cause. But further examination and reflection find in the pre-existing state of the system, in the first instance, ample cause for the phenomena, without a visibly-active agent; and in the second, we discover that what appeared to be the cause, is only a manifestation of a restorative effort of the system.

Prof. Caldwell used to contend, and with much ingenuity, that Prussic Acid destroyed life by over excitement; but, where is the proof of it? where is the time for such an action? All that we can know in the premises is, the existence and the order of two events: the administration of the drug, and the instantaneous death. In the investigation of œdema and gangrene of infants, we shall find it as difficult to show that they are results of inflammation, as that Prussic Acid causes over-excitement. We think that it will be discovered that the inflammation appears, in these forms of disease, as a secondary event, and for the purpose of separating the dead from the living parts.

ORDER I.

NON-INFLAMMATORY FORMS OF DISEASE IN THE CELLULAR TISSUE.

GENUS I.—ŒDEMA—

Induration of the Cellular Tissue.

The above caption is well calculated to produce a confused idea in the mind of the student; from the first word, he would not infer a serous repletion of the cellular tissue, but he would conclude that the tissue, in the abstract, was indurated, hardened, compacted, or consolidated.

Now, the fact in the premises is, the cellular tissue is not in the least at fault—it retains its entire integrity, but, in consideration of its extraordinary serous repletion, it offers to the sense of touch such a resistance as to produce the idea of hardness or induration.

The serous and adipose tissues present two varieties of hardness or induration—the former is attended with an increase of the size of the limbs or parts affected, and also with a violet color of the integuments, and the other, indications of a sanguineous congestion—such as difficult respiration and irregular pulse—unequivocal signs of enlargement of the heart and lungs. Adipose induration may, or may not, exist with the serous—it shows itself usually in the calves of the legs, nates, and cheeks. When merely adipose, it will not be attended by the difficulties in the respiratory and circulatory functions, above-named.

This variety is most generally exhibited in the moment of dissolution, but may be developed after death. To the touch, it produces such a sensation as would be experienced by touching the fat of dead animals. By an inordinate reduction of the animal heat, this hardness may take place before as well as after death, and it is not difficult to conceive of such a possibility, in parts so remotely connected with the centers of circulation, more especially in such patients as are usually the subjects of this form of disease, for they are so feeble as to be barely able to manifest the presence of life.

The light which has been shed upon this subject, goes to show that the so-called induration of the cellular tissue is

nothing more than such an œdema as may and does occur with adults. This we conclude to be the fact, however differently produced.

When we contemplate the exceeding debility with which such patients are born—the great amount of venous blood in the tissues, particularly in the cellular—and the dry state of the skin, it does not, to us, appear difficult to arrive at a probable conclusion.

The facts above-stated show that no process was in action for the production of animal heat—that the cellular repletion was very probably produced passively or mechanically, and that the condition which might thus result, must continue because of the non-cutaneous transpiration.

Edema is very frequently complicated with other forms of disease, but, of itself, it should not be regarded as necessarily fatal. In so tender an age, we can do but little except through the skin, and, fortunately, through it alone we can frequently effect a cure.

The practice must consist of irritating frictions, woolen garments, and warm covering. In this wise, cutaneous transpiration is easily excited. Tepid baths have been tried, and have, pretty uniformly, been found mischievous; and for the obvious reason that the vital force is incapable of contending against the external pressure; and the vapor-bath has not been more favorably received, but why, we cannot tell.

GENUS II.—GANGRENE OF INFANTS.

We have always observed that it is exceedingly difficult for men to adopt a false position and maintain consistency in its discussion. We shall find this fact to be strikingly illustrated by Wood and Billard, in the investigation of this subject.

The latter informs us, that he understands this disease to be a “variety of gangrenous inflammation,”* and that it occurs “in those infants in whom the respiratory and circulatory functions are imperfectly executed, producing a very evident sanguineous congestion of the extremities, which become purple and cold, and soon shrink, dry, decompose, and sphacelate, until an *inflammatory* circle forming, bounds the

* A singular inflammation! a composition of vitality and death!

ravages of the gangrene, analogous to the gangrene of old people—or until death terminates this disorganization of the integuments.”

We do not remember ever to have seen, in one paragraph, more inconsistency than the preceding contains. What is inflammation? Is it not an accumulation of vitality to remove disease or overcome obstruction, and is it not characterized by redness, heat, and tumefaction? Are these phenomena witnessed in the gangrenous part in any stage of the process?

In this form of disease, the extremities become cold and purple, and soon shrink and dry, and what stops this process? Simply the absence of death—the gangrene progresses until it reaches a part which has sufficient vitality to make an effort to cast off the dead part—and this effort is evinced by the inflammation—by an inflammatory circle which divides the living from the dead parts. The inflammation then, was a sequent and not an antecedent—death takes possession of the part before there appears a single inflammatory indication.

Prof. Wood thinks it very probable, that many cases of spontaneous gangrene may have their origin in an inflammation of the arteries. Although we would not dispute this position with him, yet we have a right to infer from it, that the disease under consideration may also be sometimes occasioned in this way, more especially as he has not treated of gangrene as independent of inflammation. To such an inference, we object, because the circumstances under which infantile gangrene takes place, preclude all idea of inflammation as a cause.

It occurs in those whose circulatory and respiratory functions are imperfectly executed. They stand closely allied to the œdematous. They have inherently in them, an absolute inability to discharge the essential functions of life. The same condition becomes true in extreme old age.

We can perceive no difference between an extremity frozen to death, and one that dies for want of nourishment, especially when it is denied through a positive inability of the constitution to provide it. If the gangrene of an extremity frozen to death, is one of gangrenous inflammation, then the terms defy definition, and can serve no other purpose than that of a

cloak to conceal ignorance, and we feel better under an open confession of ours, than in maintaining a false position.

This form of disease, ordinarily shows itself upon the toes and fingers, but sometimes upon the arms and legs, and, instead of the skin shrinking and wrinkling, as before remarked, it may become covered with small blisters, which contain a sanguineous fluid. The integuments become emphysematous and yield the well-known gangrenous odor. The blisters break and are replaced by a livid excoriation. The abdomen becomes distended with flatus and the body œdematous—the senses become dead, the respiration is barely perceptible, and thus the patient gradually sinks.

The only treatment that can be adopted with any probability of success, is to promote capillary circulation, by bathing and frictions applied to the whole surface of the body, together with tonics and diuretics internally, as Quinia, Hydrastin, Xanthoxilin, etc., for tonics, and the roots of *Eupatorium Purpureum* and *Daucus Carota*, or *Epigea Repens* and *Pyrola Maculata*, as diuretics. When the gangrene is formed, a solution of Sulphate of Zinc should be applied to the ulcers, over which an Elm poultice, must be placed, both for the purpose of allaying undue action from the zinc solution, and to facilitate the removal of the slough. However, but little can be expected from any treatment. Fortunately, the gangrene of infants is not of frequent occurrence, and, under proper regimen, will be seldom seen in the course of a long practice. It usually depends on some defect of organization, in which cases, the practitioner can effect but little, nor is much attention desirable.

CLASS VII.

MANIFESTATIONS OF DISEASE IN THE ORGANS OF THE EXTERNAL SENSES.

ORDER I.

INFLAMMATORY FORMS OF DISEASE IN THE ORGANS OF THE EXTERNAL SENSES.

GENUS I. — OPTHALMIA PURULENTA —

Inflammation of the Eyes.

OF all the sources of human blindness, this is perhaps the most fruitful, sometimes through neglect, at other times through mal-practice, and sometimes, probably, through its own inherent violence. It sometimes happens that mothers and nurses neglect it frequently in the beginning, under the impression that the infant has taken a little cold in the eyes, and that probably it will subside or leave the child in a few days. In the meantime, the only remedy that has been used was the washing of the eyes with breast-milk—not so “insignificant” a remedy as some have thought it to be—far better than the profession has sometimes prescribed; but, nevertheless, inadequate to the demands of the case, as many physicians can testify, who upon being called, have found the eyelids swollen and glued together, and upon obtaining a view of what is going on beneath them, finds sometimes only inflammation and suppuration, but at other times he finds one or both eyes destroyed—irreparably ruined—the cornea is opake or it has sloughed, or possibly some variety of staphyloma has been produced.

It usually attacks the infant between the third and eighth day, but sometimes at a later day, though probably never after the second week from birth. The first manifested sign of its approach, is the gluing together of the eyelids during

the night, but shortly after, they become swollen, which is most apparent in the early part of the day, and quickly following, the globes of the eyes are found participating in the inflammation, and the infant keeping its eyelids closed—shunning the smallest and most diffused ray of light.

After the third or fourth day of the attack, there is usually a copious secretion of pus, the inspissation of which between the eyelids, pretty firmly glues them together during the night, and the balance being retained between the lids and globes, gives the appearance of much swelling of the eyes, in the morning.

When the lids are separated, which is readily done by the use of warm water, considerable pus escapes, and upon separating the lids, the balls seem to be floating in pus; no part of the iris can be seen, and when the pus is removed the lining membrane of the lids is found to be of a bright red or scarlet color, indicating a severe inflammation.

CAUSES.—Prof. Dewees is of opinion that this form of disease is occasioned by the presence, with the mother, of leucorrhœa or gonorrhœa; and that it is acquired by the infant in transitu. The reason he assigns for this opinion, which has the most influence upon us, is, that in many instances of this affection which came to his notice, he learned, upon inquiry, that the mother was the subject of one or the other of the above forms of disease. In confirmation of this conclusion, or rather one of the facts that induced it, is its appearance in about the proper time for such a cause to have produced it.

There is another circumstance which he names, in this connection, that is entitled to some weight, and that is, the severity of the inflammation; but Dr. Watson states that it sometimes occurs “in infants of mothers who seem to be healthy, and who deny that they have any unnatural discharge.”

Dr. Watson thinks it probable that it may be induced by other causes, as bad management of the nurse, cold air, a hot and bright fire, soap, ardent spirits, etc. Without any intention of denying the existence of such probability, we would remark, that it seems to us quite reasonable to suppose, that if other than the causes assigned by Prof. Dewees, can produce the disease, that it would not be confined to so early a period of life.

PROGNOSIS. — This form of disease, in adults, says Dr. Watson, is much more controllable than it is in infants, so much so, that when the physician finds the cornea, in the case of the latter, to be sound, he may confidently assure the parents that the eyes of the infant are safe; if opacity has seized upon the cornea, the chance of saving the eyes is doubtful, but not hopeless; and if the cornea cannot be seen, the prognosis is unfavorable, and this should be the statement to the parents, "for such is the ignorance of the vulgar, (and I include both rich and poor under this phrase), that if they are not forewarned of the danger, they are very apt to attribute the blindness that ensues to your *stuff*, as they call it."

TREATMENT. — The first indication is to relieve the inflammation, should it exist, and this may be accomplished by the application of cold water to the eyes, continually applied by means of a light compress, and the eyes should be frequently bathed with a decoction of Marsh Mallows or with Rose-water.

As soon as the inflammation has been subdued, the eyes should be bathed several times a day with a decoction of Hydrastis Canadensis, and, in obstinate cases, the Compound Myrrh Collyrium, or the Compound Collyrium of Golden Seal.

The bowels must be kept regular by enemata; active cathartics by the mouth must be avoided, as well as the action of excessive light upon the eyes for several days, both during the treatment and after a cure has been effected.

GENUS II.—SCROFULOUS OPHTHALMIA.

We are not prepared to believe that there is such a specific form of disease, but we admit that common ophthalmia, induced in a scrofulous constitution, may be so modified as to deserve a special consideration, more especially as it has this specific feature, namely: infants are the most general subjects of it—in them, it appears, apparently, as the first indication of the existence of a scrofulous constitution.

When it first invades the conjunctiva, its character is that of simple ophthalmia, and so it continues through the truly inflammatory stage, and therefore, it is not until a somewhat chronic character has been assumed that the scrofulous symptoms appear, to impede recovery. It is seen that the conjunctiva

does not return to its normal color and condition ; that the light has become painful ; that the tears flow copiously ; that the purulent discharge has become reduced ; that the glands of the tarsi produce a muco-purulent secretion that agglutinates the eyelids during sleep ; and in many instances, we find delicately-small vesicles scattered over the cornea and conjunctiva of the sclerotic coat. These vesicles may run on to the formation of ulcers, and they progress and so penetrate the cornea as to communicate with the anterior chamber of the eye, and thus give egress to the aqueous humor. A considerable remission of the symptoms frequently, if not generally, takes place in the evening or after sunset,

TREATMENT.—In the treatment of this affection, the first indication is to correct the depraved condition of the constitution, and this can be best effected by placing the patient in a pure and healthy atmosphere ; to apply warm and comfortable clothing ; to supply a nutritious diet : beyond these, to effect a general purpose, we must rely upon tonics, salt-water, and alkaline baths ; very little local treatment is required.

In the early stages, except in cases where the constitutional treatment has been neglected, cold water and Slippery-elm poultices and confinement to a dark room, will, in most cases, prevent any further development of the disease ; but, in cases where this is not sufficiently active to arrest the inflammation, the leaves of the *Scrofula Marylandica* may be powdered and mixed with Slippery-elm. This, in many cases, will remove the inflammation in a very short time, but, in more obstinate cases, a strong decoction of *Hydrastis Canadensis* should be applied to the eyes constantly during the day.

The Alcoholic vapor-bath, with the Sudorific Tincture, should, in all cases, be used when the skin is dry.

As soon as free perspiration has commenced, it should be kept up by the aid of diaphoretic teas or by the internal use of cold water, after which cold water may be frequently applied to the eyes.

If constipation of the bowels be present, the Compound Powder of Jalap and Cream of Tartar should be used until free catharsis is produced.

If ulceration of the cornea should occur after the active

stages have subsided, the following prescription may be used :

R. Tinct. Hydrastis,
Tinct. Capsicum,
Olive Oil, aa ʒi. Mix.

From two to five drops should be applied to the eye twice a day. This will produce pain when first applied, but it will continue only a few minutes. After having used this for several days, as above described, and no improvement of the ulcer or opacity takes place, a mild solution of the Sesquicarbonate of Potassa may be applied.

In all cases, the free use of the Alterative Syrup, or the Compound Syrup of Stillingia should be made, given in as large doses as the patient will bear, without being attended with nausea.

When the disease resists all of the above treatment, as it may in some cases, the Irritating Plaster may be applied and kept upon the back of the neck, until suppuration is induced, and this, as a general thing, should be kept up by the re-application of the plaster until the disease has disappeared, which may require from *three to five* months.

GENUS III. — OTITIS—

Inflammation of the Mucous Membrane of the Ear.

This form of disease, with those who are old enough to make known their condition, produces excruciating pain and intolerable humming in the ear, and therefore, we cannot doubt that the same is true of its existence in the infant.

Otitis is divided into external and internal, according as it affects the meatus auditorius, or the cavity of the tympanum or internal ear.

Its occurrence in the internal ear, not unfrequently appears before the completion of the first dentition, producing great suffering, of which the patient is unable to give any particular information: we must be guided to the seat of the disease by its instinctive manifestations. Before the violent stage of the attack, the child is peevish and fretful, from a few hours to a day or so. During this time, it manifests no disposition to play, all sounds are unpleasant to it, and if tossed about, it

will cry ; it seems but little disposed to take the breast, but will take food from a spoon. It desires to rest the affected side of its head upon its mother's bosom, and if on the bed, it turns its head from side to side on the pillow, and finally comes to repose upon its face. After crying, it sleeps, but the repose is short, because of some sudden infliction of pain. It may sometimes cry for hours in defiance of all means to quiet it. If old enough, it will frequently apply its hand to the affected ear.

The greatest intensity of the pain does not continue long, before it is relieved by a discharge of pus, which may prove a final terminus of the disease, or merely an abatement of it, but in young infants it very rarely puts on the chronic form.

When the disease becomes chronic, it is accompanied by a purulent discharge from the meatus auditorius, and usually proves so incurable that it progresses to an invasion of the internal ear, and after a complete destruction of the organ, it becomes well, in most cases, but, occasionally, it invades the brain and terminates fatally.

DIAGNOSIS.—There is some little danger of mistaking the acute form of this disease for hydrocephalus ; but if proper attention be given to a few circumstances such a blunder may be avoided. In hydrocephalus, there is costiveness, vomiting, and febrile indications, which are absent in otitis—pressure upon the cartilages of the affected ear will produce indications of suffering, which the well one will not, and the constant disposition of the patient to rest the head on the same side, and the placing the hand to the same side, furnish an ample diagnosis.

TREATMENT.—In this affection, we have found the greatest use by applying sinapisms of Garlicks, bruised, to the feet, and behind the ears, with the use of Saffron infusion, or other agents which will equalize the circulation by a cutaneous determination, together with the application of a mixture composed of two to four drops of Oil of Sweet Almonds and one of Laudanum, a drop of which, warmed, may be allowed to fall into the affected ear, or may be pressed gently into the ear on some lint, and repeated as often as required.

The bowels should likewise be kept free by mild laxatives, brisk purgation being unnecessary.

When a discharge takes place from the ear, and manifests a disposition to become chronic, the abscesses not healing readily, the parts should be kept clean, by frequently syringing out the canal of the ear with Castile Soap and water, or a solution of Chloride of Sodium; after which, to prevent, if possible, any mischief from an extension of the disease, the ear should be syringed with a weak solution of Sulphate of Zinc, or Sesquicarbonate of Potash.

It will be borne in mind, that the tissues involved are of a very delicate nature, and will not bear the use of powerful applications. Whatever solutions may be injected, should be very weak, and at least as warm as new milk,—tepid. Setonism has been largely practiced, and, no doubt, has been often very beneficial, though few cases require such harsh practice.

CLASS VIII.

MANIFESTATIONS OF DISEASE IN THE GENITAL APPARATUS.

ORDER I.

DISEASE OF THE GENITAL APPARATUS.

GENUS I. — ADHESION OF THE LABIA PUDENDI.

THIS event may sometimes be congenite, but it does not generally occur before the child is six or seven months old, and perhaps it as rarely occurs after the age of twelve months. There is too much solicitude felt about the normal condition of the genital parts to admit of a supposition that it should escape an examination within the first day or two of independent existence; we must, therefore, conclude, that when the discovery is made between the sixth and twelfth month, that it resulted from neglect.

The genital parts of infants should be as regularly cleansed as the child is washed, and this duty should be positively enforced upon nurses. When we consider the extreme delicacy and vascularity of the lining membrane of the labia, we should not be surprised that such a result should follow neglect. The uterine and vaginal secretions may, by continuing too long upon a surface unadapted to them, produce irritation, and when aided by the salts of the urine, may produce inflammation and consequent adhesion.

Billard says, that in infants, the labia are very prominent, and become infiltrated, tumefied, and inflamed with the greatest facility, when constantly covered with the excretions.

An event of this kind has, very unfortunately, sometimes escaped detection during infancy, and if detected in after years by the female herself, it has been neglected to a moment the most embarrassing in her history—and then a surgeon is sent for to effect their separation.

The labia readily separate when in their normal condition, and therefore, when they refuse to separate by a very slight effort, we may suspect that adhesion has taken place, and when it has, it is found to exist through their whole length, as far as the meatus urinarius. Through this opening, the urine is discharged, and so is the menstrual secretion in after years, should the adhesion continue.

The profession has but one remedy for this accident, which is the knife. The division or separation may be easily performed by passing a probe-pointed bistoury into the unclosed part and cutting down to the junction of the labia. They may be then kept separate by the introduction between them of a little oiled lint.

This separation is, however, sometimes spontaneously effected; the adhesive inflammation that closed them may pass into suppuration and separate them. Medical history records several instances of this kind, but such an event is never to be hoped for, because it is never so well done as with the bistoury. In two or three days after the operation, the parts are well.

GENUS II.—DISCHARGES FROM THE INFANTILE VAGINA.

In infant females, the vagina is very much developed, and its mucous lining secretes a large quantity of white, adherent mucosity. It is, furthermore, not uncommon to observe a red, blood-like fluid to flow continually from the vulva for some days or weeks after birth—it has much resemblance to the catamenia in adult females. It is not known to produce any inconvenience, and after a time ceases of itself. These physiological facts indicate a necessity for great cleanliness during the first weeks of female infancy, a neglect of which occasions, no doubt, those unhealthy discharges of which we are about to treat.

Discharges of a purulent character, from the vagina, show themselves, sometimes, in females of about the age of five years, which may continue indefinitely. In reference to such a condition, mothers should keep over their daughters a vigilant care. Upon the indulgence of such conditions, is founded those troublesome cases of fluor albus, which do so much to impair and enfeeble the general health in future life.

This form of disease cannot be cured without the most strict regard to cleanliness, and hence the treatment should commence with it. Let the vagina and the interior surfaces of the labia be washed with warm water four or five times a day, and after each washing, apply the warm Borax Lotion with Morphia. If excoriation of any part exists, let it be coated with fresh Lard, or covered with flour of Slippery-elm bark. The bowels should be maintained in a normal condition, and the diet should be nourishing — fats, sugars, butter, and old or rancid meats should be avoided. If such a course of medication does not remove the discharge, then alteratives must be conjoined with the treatment, as the Compound Syrup of Yellow Dock, or the Compound Syrup of Stillingia, with or without the addition of the Iodide of Potassium, as the case may require.

GENUS III. — HYDROCELE, OR DROPSY OF THE SCROTUM.

We understand, generally, by this term, a collection of serous fluid in the areolar texture or in some of the coatings, either of the testicle or spermatic cord. When the fluid is in the spermatic cord, it is known as encysted or diffused hydrocele of the spermatic cord, as the case may happen to be. Hydrocele of the tunica vaginalis occurs when the collection of fluid is confined to the envelope; and it is regarded as congenital when the interior of the membrane possesses a free communication with the cavity of the abdomen.

Although the affection may be congenital, it very rarely becomes noticed under several days. As all affections of the genital organs, in consequence of their great importance, excite alarm, it may be readily supposed that this forms no exception, and it is fortunate that such is the case, because a neglect of this might occasion an indifference to another affection, which it resembles, namely, a rupture, which is really of more importance, as it involves the life of the patient.

The tumor is sometimes as large as an egg, and it is occasionally confined to one side of the scrotum; it gives the patient no inconvenience, and though it generally occurs in infancy, yet, in some instances, it is delayed several months.

DIAGNOSIS.—It is important that a clear diagnosis should be had between hydrocele and rupture. The former presents a

considerable transparency; the scrotum is more equably distended; the tumor is not increased by crying; the handling of it gives no pain, and pressure does not remove it.

TREATMENT.—Cold water poured upon the parts twice a day, from a height of some two or three feet, will usually overcome the difficulty; about half a gallon may be used at a time, allowing it to run through the spout of a tea-kettle.

Should the case not readily yield to this, the parts may be kept constantly moistened, in the interim, with a solution of Muriate of Ammonia in vinegar, which may be applied on cotton or lint, and gentle pressure made upon the scrotum by means of a bandage, for the purpose of aiding absorption. In connection with this, an infusion of some diuretic agent may be used, such as, *Pyrola Maculata*, *Aralia Hispid*a, etc.

Occasionally, in long-standing cases, where a large amount of fluid is present, and the tunica vaginalis becomes thickened and insensible, which is seldom the case with children, being more common to persons somewhat advanced, the fluid will have to be discharged by means of a trocar, after which stimulants are to be injected, such as brandy-and-water, Tincture of *Sanguinaria* and *Capsicum*, and even a solution of Sesquicarbonate of Potash, which are to be continued until the cure is effected.

We recommend to inject a solution of Iodine, Tr. Iodine, and water aa, to get up independent inflammation. The use of Iodine, or Iodide of Potassium, internally, is indicated. (See *Symes' Surgery*.)

PART II.

MANIFESTATIONS OF DISEASE IN THE VEGETATIVE OR DIGESTIVE SYSTEM.

INTRODUCTION.

IF every part and parcel of this system should be suddenly destroyed, it would not be followed by a corresponding suspension or destruction of life; consequently, in point of importance, it is only secondary to that, the consideration of which we have just concluded.

In the digestive process, life can be continued for a considerable time, with a very feeble exercise of the nutritive process, but in the respiratory, there must be precisely function enough—the blood must be oxygenized—and the suspension of a few respirations never fails to extinguish the candle of life.

Life may be continued, until destroyed by waste, so long as the nervous system shall maintain its integrity, but this it cannot do without the co-operation of the respiratory and circulatory functions. To explain—the lungs must discharge their function upon the blood, and the blood must be conveyed to the nervous apparatus, or life is at once extinct. It does not appear, then, according to Prof. Meigs, that “the source of all vital power is in the nervous mass,” for, no matter how perfectly this mass preserves its integrity, its power will depend upon the thoroughness of its oxygenation; yet it is true, that unless the skin and the digestive apparatus discharge properly their functions, the blood cannot be of a good quality; but this imperfection affects nutrition much more than nervous innervation—this last process depending more especially upon the presence of oxygen.

Without regarding the pulmonary function as the only direct source of innervation to the nervous system, we cannot appreciate its great importance. The nervous and circulatory systems hold to the lungs the relation of servants—while the lungs exist, in relation to life and the power of life, as a *sine qua non*.

But, however important the cerebro-spinal system may be to our present existence and external relations, yet the vegetative is not less indispensable to the development of our oodies and their perpetuity to old age; and as a large portion of our second Book was appropriated to the proper care and development of this system, the necessity of saying much about it, in this place, becomes unnecessary.

In our investigation of the previous forms of disease, we found them associated with certain conditions of the base of the brain and the spinal column, which were so obvious as to give to our labors somewhat of a scientific accuracy; but as the various forms of disease, incidental to this system, depend mainly upon the ganglionic, yet, for our preservation, it is made to hold intimate relations with the cerebro-spinal system of nervous communication, as to envelop them in much obscurity—an obscurity that is well calculated to test the perceptive and discriminating capacities of the practical physician.

We cannot say what may not be discovered in relation to this subject, but as yet we know very little more than that we are particularly ignorant of the *modus operandi* of that nervous influence to which they are subject.

It should be remembered, that of the existence and functions of this system we have not, in a state of health, any consciousness, and that a connection between it and the cerebro-spinal only becomes known to us in a state of disease; it happens, therefore, that while the morbid action is going on, in one part, the manifestation of existing disease will be in a remote and a very different part—that, for illustration, the patient may suffer severely with a pain in the head or in a tooth, while the stomach is the true seat of the morbid action—that while some part of the ganglionic or splanchnic system is being undermined by serious disease, we have to search for the particular part through its innumerable sympathies in the cerebro-spinal.

Thus it appears, that although we have divided the manifestations of disease into two great families, which, in reality, differ as widely from each other as any two great families in natural history, yet, so numerous are the points of connection between the two, that it would scarcely have appeared as a violation of order to have treated of both as one.

In our division, we have included in the cerebro-spinal system, the respiratory apparatus, because we have, in part, a voluntary agency over it, and because its strength and development incidentally result from the exercise of our voluntary agency. We have also embraced in the same family the circulatory apparatus, although we have no voluntary agency over it, because of the second reason above assigned for the respiratory.

In fact, we adopted the division we have made, because the functions embraced by the first part can be referred to the base of the brain, directly, for the efficiency they manifest. By this division, therefore, we have been enabled to treat of all that is embraced in the first part with more utility and lucidity than we could have done under any other.

Every teacher adopts some plan by which he expects to facilitate the performance of his function—and in this consists the greatest importance of classification, for nature, in a great measure repudiates any classification that man can make.

CLASS I.

MANIFESTATIONS OF DISEASE IN PARTS LOCATED ABOVE THE DIAPHRAGM

ORDER I.

INFLAMMATORY FORMS OF DISEASE IN PARTS LOCATED ABOVE
THE DIAPHRAGM.

GENUS I.—STOMATITIS—

Inflammation of the Mouth.

REMARKS. — This affection appears under a considerable variety of forms, which result from differences of cause and of constitution. This form of disease appears with such marked differences, in different individuals, as to have caused pathologists to divide it into six or seven sub-forms, for its better elucidation and treatment.

SPECIES I. — *Stomatitis Erythematic* — *Common Inflammation of the Mouth.*

This inflammation may so spread itself as to occupy the whole of the lining membrane of the mouth, but, more generally, it appears in patches. It is sometimes very superficial or erythematic in its character, but at other times it involves the entire thickness of the membrane, and, in some instances, involves the sub-mucous tissue and the adjacent glands, and thereby produces considerable pain and swelling.

The superficial or erythematic form is characterized by redness, heat, and sometimes with dryness of the mouth and tongue. It varies considerably in its duration and intensity; with regard to the first, it may be transitory, or it may continue for a long time. In young infants, it is but rarely attended by febrile symptoms or derangement; but in children of eight or nine months it is apt to be attended with much

pain and febrile derangement. The epithelium sometimes becomes opake, and occasionally rises into blisters, and becomes detached.

In such states of the system as indicate a more than ordinary depravity, superficial ulcers appear, which may spread or become deep, as well as extensive, and finally, if the constitution be too depraved and feeble to sustain such an inflammatory action as may be essential to the removal of the disease, gangrene may supervene.

When this affection happens to involve the gums, after the teeth have appeared, they swell and rise between the teeth, and frequently ulcerate, and this destructive action may continue until the teeth are disengaged or removed; but such instances as this are very rare.

There is a mild variety of this affection which has been denominated catarrhal—the secretions of the mouth are abundant—the tongue is furred, and the taste blunted. This has been, very carelessly, mistaken for disease of the stomach. Such a suspicion should not be found in the absence of all direct gastric symptoms. Stomatitis may accompany gastritis or enteritis, but, in such cases, the symptoms, if attended to, will permit of no mistake.

CAUSES.—When it is idiopathic, it results generally from some chemical or mechanical cause—the latter can very seldom be a cause in infancy, but the former may, as by an accidental use of acid substances. At this early age, it is most generally symptomatic of gastric irritation or disease. It may sometimes result from an extension of either variety of angina.

TREATMENT.—If the disease have resulted from chemical or mechanical means, the occasional use of a little Sweet Oil, applied with a hair pencil or a feather may alone prove sufficient, but should it prove more obstinate, resort must be had to astringent washes, as infusions of Geranium, and in case of much inflammation, a solution of Borax should be freely used as a wash.

If it shall be symptomatic, our first duty should be the removal or mitigation of the disease of which it is a consequent.

SPECIES II.—*Stomatitis with altered secretion*—*Infantile Sore-Mouth—Thrush.*

This form of disease commences with an erythematic inflammation of the epithelium of the mouth, or the surface of the tongue; and after two or three days, small, white points are presented upon its extremity or sides, or upon the internal surface of the lip, particularly the inferior one, and they appear to crown the papillæ of the surface to which they adhere. These increase in number and coalesce so as to form patches, which may finally cover the tongue, the roof of the mouth, the inside of the cheeks, and sometimes the fauces.

The progress of this form, from its most simple to its more complicated character, presents, through its excretion or exudation, three distinct results or phenomena: the first we have named, consisting of white points; the second, is that of variously-sized shreds; and the third, is that of a pellicle or membrane covering all of the diseased parts. This membrane assumes, sometimes, a yellowish or a reddish color, but these are adventitious circumstances—having nothing to do with the disease—mere stains from the presence of bile, or sanguineous exhalation.

The true seat of the disease appears to be the surface of the epithelium, and not the parts below it; and the state of it, which the white points represent, may be regarded as the first or mild stage, and if it progress no further—the white points disappearing—the attack may be considered as mild.

When the points coalesce to the formation of patches, which thicken and exfoliate and leave the surfaces they occupied red and inflamed, to produce another crop to exfoliate in like manner, without further increase of the inflammation, then there is a termination of the disease in the second degree.

When the inflammation so spreads as to render the patches confluent—forming follicles of greater thickness and extent, then it is regarded as malignant. Post mortem examinations have discovered patches of the exudation in the œsophagus, stomach, and small intestines.

In the course of the disease, in either of its forms, the exudations may exfoliate and be replaced several times, and consequently, there is no definite period for its reign—it may vary

from a few days to several weeks. Diarrhea, flatus, and colic pains are frequently attendant upon it. The breath of the child often has an acid odor—the contents of the stomach, when thrown up, are green, and smell like the breath, and this acidity may be the occasion of that redness which is sometimes seen about the anus in this complaint.

The skin is usually hot and dry and the thirst insatiable, and yet fever is scarcely ever manifested, and the pulse is as rarely affected.

No age can be regarded as entirely exempt from this disease, but infancy is peculiarly liable to it, and equally so, perhaps, in all seasons of the year. It is not now considered to be contagious.

CAUSES.—Improper nutrition, foul air, and improper or deficient attention to the skin, may probably be regarded as the principal exciting causes in early infancy. The remote cause, it is said, may consist in that predisposition of the mucous membranes of infancy to inflammation—a consequence of their sanguineous repletion. We think it to be far more probable that it consists in some feebleness or depravity of the constitution—a want of vital force; and hence, instead of a predisposition to it, there was only an organic liability to it. And it should be remembered that neither fat nor lymph indicate an adequate vital force. In the first part of this Book, we had several illustrations of this truth.

Considerable difference of opinion prevails in the profession as regards the true source of thrush; some have maintained that it is always sympathetic, while others are very positive that it is sometimes idiopathic. We are willing to admit the latter conclusion, in a very large proportion of instances. We view it as a disease, when idiopathic, as having its origin in a feeble vital force, and this explains why it is so much more frequently met with in hospitals than in private practice.

Dr. Eberle says, that “feeble and sickly children scarcely ever escape from this disease.” Now, when it is remembered that the feeble children are very generally the sickly ones, our conclusion, that it depends greatly upon an original organic and feeble viable condition of the system, is rendered even more than probable. He further states, that “bad and old milk, and thick farinaceous preparations, sweetened with brown

sugar or molasses, are especially apt to give rise to the disease." Here, again, we find our leading argument to be sustained. The nutritive system is incapable of converting the carbon into fat, and the lungs cannot combine it with oxygen, and disease is the consequence.

TREATMENT.—As in this form of disease the bowels are, if not always, very generally, in a deranged condition. A superabundance of acid is thought to be generally present, as the evacuations, if diarrhea be not present, are usually of a green color. We are not willing to take it as granted that the green color of the fæces is a certain proof that they are acid—we do not know that it is ever the case, but we are sure that it is not always the case. Green evacuations, are sometimes, and so far as we know to the contrary, entirely insipid and insensible to any test for the presence of acid. Nevertheless, the green color is an evidence that the bowels are not in a normal condition, and therefore it would be judicious to employ the Compound Powder of Rhubarb, or the Syrup of Rhubarb and Potash, to change this condition and restore the vitiated excretions to a state of health.

In the event the stools are frequent, sparing, aqueous, painful, and straining, a small portion of Paregoric may be added to the above agents, and injections of Starch-water or mucilage in small quantities, administered immediately after each alvine evacuation; sometimes infusions or decoctions of astringent vegetables may be advantageously employed, as of Blackberry root, Dewberry root, etc.

When the diarrheal evacuations shall have a green color, which is sometimes the case, the use of Magnesia and of Lime-water has been recommended, but in the generality of cases, we prefer the course above-named to any other.

When the bowels indicate the existence of much irritation, the discharges are scanty and possibly stained or streaked with blood, Dr. Dewees strongly recommends the use of the Oil of Butter two or three times a day. For the same purpose, he thinks very favorably of Gum Arabic water.

But in this plan of treatment, even though we shall succeed in preventing a prostrating debility, a circumstance that not unfrequently results from it, we have incomparably more confidence in the efficacy of a purely revulsive treatment, because

a thorough equalization of the circulation will be followed by an improved condition of the alvine secretions; therefore, in addition to the means above pointed out, the whole external surface should be once or twice a day bathed with a warm, weak alkaline wash, and dried with some degree of friction.

The most proper food for the child is its mother's milk, provided she be in good health, but even then she should, for the time being, live upon simple and very digestible food.

Local applications, in the treatment of this form of disease, are not to be dispensed with. During the inflammatory stage stimulating applications should be applied under the jaw, as the Compound Capsicum Liniment or the Compound Tincture of Camphor, which, in very young infants, may be diluted by the addition of sufficient Olive Oil; and, for a mouth wash, or rather, as a remedy for the sores contained within it, a decoction of *Hydrastis Canadensis* may be used several times a day, and even a portion of it may occasionally be swallowed; or Borax may be added to the decoction in many instances, with decided advantage.

SPECIES III.—*Stomatitis Follicular*—*Inflammation of the Mucous Follicles of the Mouth.*

In the appearance of aphthæ and thrush, and in their constitutional symptoms, there is a very striking analogy; but still we cannot declare, with Prof. Dewees, that we can perceive no difference between them as described by C. M. Billard. The resemblance is one of appearance, and the difference is one of reality—of anatomical location; and when we consider that both are located in the same districts, we should not consider it strange that the constitutional symptoms should scarcely admit of a distinction. We concede that the distinction appears to us as one of fact—of science, rather more than one of therapeutical utility.

In muguet or thrush, the disease is confined to the surface of the epithelium, says Billard; but in aphthæ, it is confined to the muciparous follicles of the mucous membrane. Now, if these be the facts, then certainly they are not one and the same disease, although it may be difficult to determine a difference between the symptoms.

Prof. Wood regards thrush and aphthæ as distinct forms of

disease, but he does not agree with Billard in considering follicular inflammation and aphthæ as one and the same. He admits that the muciparous glands may be sometimes the seat of aphthous ulcerations. He teaches that aphthæ is a vesicular inflammation and embraces all the small ulcers, with whitish surfaces, which are frequently to be seen in the mouth.

This misunderstanding between pathologists is not as to the true seat and character of those forms of disease which visit the mouth, but as to which of them belongs, truly, the name of aphthæ. It is fortunate that this difficulty can avail but little, if anything, in practice, because the treatment must be about the same in all three of the inflammations—the diffused, follicular, and vesicular.

After digesting the information which we have been able to glean concerning these forms of disease, we are disposed to conclude that the one which is generally regarded as aphthæ, in this district of country, is the *thrush*, or *muguet* of French writers—the infantile sore-mouth of common denomination.

As Prof. Wood, no doubt, understands that form of disease which is generally understood to be aphthæ, by the profession of this country, it is perhaps best, for practical purposes at least, that we adopt his views.

The mucous follicles are so exceedingly small that they cannot, ordinarily, be seen; but the infinity of their number sufficiently compensates for their smallness; but, when they become inflamed, they may be felt with the finger although they may not be seen, and when first seen they are small, hard, round, whitish eminences, surrounded by a reddish circle. When the inflammation takes its natural or uninterrupted course, these eminences become soft in their centers and ulcerate, throwing out a whitish matter which is disposed to adhere to the surface.

These ulcers are either isolated or confluent, and when the latter, they present a continuous, whitened, and ulcerating surface. It is common to adults and infants, but more frequently appears in the latter, and with them it is sometimes mistaken for the thrush.

It is said to attend at the conclusion of the exanthematous fevers and chronic inflammations of the viscera in general.

The treatment of this form of disease, so far as is now known, does not differ from that of aphtha, to which we refer.

SPECIES IV. — *Stomatitis Vesicular* — *Aphthæ* — *Ulcerous Inflammation of the Mouth*.

The term aphthæ is applied to all those small and whitish ulcers which frequently appear within the mouth, without reference to their particular seat or source.

This form of disease generally begins on the inner surface of the inferior lip, or within the angles of the lips, and consists of white vesicles, which may be few or many. From these points it spreads rapidly upon the buccal parietes and surfaces of the mouth and gums. At other times, it appears simultaneously, and in the same form, upon several portions of the buccal cavity. Wherever it may begin, it resembles a coagulum of milk. In its severer forms, as in the thrush, the eruption becomes darkish or reddish, and probably because of the presence of blood.

Aphthæ is thought by many to be altogether symptomatic—that it is always preceded by some gastric derangement, but as it sometimes attacks children whose stomachs and bowels are in excellent health, we are justified in doubting its purely symptomatic character. It is thought to appear, sometimes, epidemically, and if it do, we cannot well doubt that it is sometimes idiopathic.

As in the thrush, so in Aphthæ, the stomach, the bowels, and the brain appear to participate in the inflammation of the mouth—the desire to sleep is unusual, and the bowels are troubled with aqueous, acrid, and greenish stools, attended more or less with flatus.

Young children, when the disease is severe, emaciate rapidly—they are harassed greatly by colics, diarrhea, and gastric irritability. The last is sometimes so great, that scarcely anything is retained. The œsophagus is sometimes so closed up with aphthæ, that the little which the stomach may retain is with great difficulty swallowed.

It is useless to pursue the symptoms of this disease further, because it is impossible to define an appreciable difference between the general symptoms of it and thrush and Dr. Eberle uses the two names synonymously.

Aphthæ is not so common to early infancy as to a more advanced stage of childhood, and after this it may attack any age. It is not confined to the mucous membrane of the mouth—Prof. Dewees says, that he has seen it “most plentifully within the labia pudendi as well as on the internal face of the prepuce.” After this remark, we think it rather surprising that he should seriously doubt as to the occurrence of aphthæ upon the mucous lining of the stomach and bowels.

CAUSES.—Feeble children, and those whose constitution has become depraved by the use of improper food, air, etc., are the most liable to it. Prof. Dewees thinks that farinaceous diet predisposes to the disease, more especially when sweetened with brown sugar or molasses. We would, *a priori*, adjudge sugar and fats as calculated to produce the disease, especially with the feeble—particularly the latter.

TREATMENT.—Same as that of thrush.

SPECIES V.—*Stomatitis Pustular—Cancrum Oris—Canker; Ulcerative Inflammation of the Mouth.*

The disease of which we are about to treat must not be regarded as being a dependant upon, or as a sequent of, any one of the preceding varieties of stomatitis; but as being one which is entirely independent of them, and, also, as being one to which new-born infants and young children are frequently liable. It may locate itself indifferently upon any portion of the buccal cavity. It may select the base of the tongue, the frænum, the palatine arch, the gums, the lips, or the internal surface of the cheeks. It has been confounded with aphthæ, but by the time we conclude, it will be discovered to be an entirely different form of disease.

It is but rarely, if ever, noticed before it becomes an ulcer of considerable magnitude, of a grayish color and surrounded by an inflamed border. The adjacent or contiguous parts are usually so far involved as to be inflamed and swollen. If it be located in the cheek or in either of the lips, the swelling will be exposed to external observation, and the cutaneous surface will be red and shining. The internal swelling is sometimes so great as to render an examination of the ulcer very difficult.

The ulcer, perhaps, never penetrates through the cheek, nor

destroys the part in which it is located, except, possibly, in some of the fatal instances, and they are exceedingly rare; and though rarely fatal, it is nevertheless a painful disease.

It is usually attended with fever, constipation, a copious flow of saliva and a fetid breath, but this fetor is distinct from that of gangrene. When located in the gums, it is apt to expose the alveolar processes, and though it may continue for weeks or months it is not apt to be attended with worse consequences.

CAUSES.—The causes of this disease are fully as obscure as those of thrush and aphthæ. While, on the one hand, it has been referred to improper nourishment and depravity of constitution, it has, on the other hand, been known to appear under very opposite circumstances—apparently so, at least.

Writers have not yet learned to consider very feeble and often-ailing children, and very obese ones, as being very similarly related to disease and death. The latter may escape for a long time those irritations which for a similar period distressed the former, and yet be equally destitute of vital force; and this truth becomes manifest as soon as the fat-producing process becomes disturbed or arrested.

If we were to indicate any one article as being the most productive of juvenile disease, it would be sugar — saccharine matter; and for two reasons: first, all children are fond of it; and second, parents, almost universally, believe that it is healthy and nutritious. In some sections of our country, it constitutes a leading article of juvenile diet. Ulcers and eruptions are common to those who intemperately indulge in alcoholic drinks; how then can children escape similar afflictions who use much saccharine matter? Both are carbonaceous, and both are, measurably, destitute of nourishment. Those infantile and juvenile constitutions which cannot convert sugar into fat, we would, *a priori*, suppose to be most liable to the present forms of disease, and such we find to be the fact.

We know that hundreds of children have suffered whose only food had been the mother's milk, but let it be remembered, that too many mothers indulge in gross and carbonaceous food.

TREATMENT.—In the treatment of this affection, the most

important indication is to arrest the sloughing and prevent its further progress, and if this be not accomplished, the disease will rapidly proceed to a fatal termination, notwithstanding a favorable condition of the pulse, appetite, and mind. And, probably, a reason why the disease generally resists the treatment employed, is, that after the affection has been properly recognized, the local applications are either of too mild a character or have been insufficiently applied; and this may be owing to the difficulty which attends the effectual application of any caustic to the gangrenous parts in the interior of the mouth, both from the swollen and resisting condition of the cheek, and the struggles of the child to free itself from a painful operation.

A writer, in speaking of the application of caustic in this disease, remarks :

“Ineffectual cauterization, however, is useless, or worse than useless; and though every endeavor should be made to prevent the needless destruction of healthy parts, yet of the two evils, that of doing too much is unquestionably less than that of doing too little. It is of importance, moreover, not only that the cauterization should be done effectually, but also that it should be practiced early.”

The sloughing advances rapidly from within outward, and when once it has penetrated through the substance of the cheek, the chances of cure are but few; consequently, the treatment must, from the commencement, be active and energetic. The caustics which have been recommended are strong Hydrochloric or Nitric Acid, which must be applied to the gangrene in the interior of the mouth, by means of a piece of sponge or lint fastened to a quill, at the same time properly protecting the tongue and other healthy parts, as far as possible, from the action of the caustic.

We have never used the Sulphate of Zinc in this disease, yet, from its known success in other gangrenous affections, we should deem it an important local agent in arresting the sloughing; but whatever agent is employed, the mouth must be carefully examined every six or eight hours, to ascertain whether the sloughing has been checked, or whether it has extended into the parts beyond the yellow eschar produced by the acid; and the cauterization should be repeated sufficiently

often to completely arrest the disease. During the whole course of treatment, the mouth must be frequently washed with astringent decoctions, and the diet should be of a generous and nutritious character, supporting the patient's strength also by Wine, Porter, Quinine, or other tonics and stimulants.

Great success has obtained in this affection by the following treatment:

A mild aperient of Rhubarb and Magnesia was administered, together with four grains of Chlorate of Potash dissolved in water sweetened with syrup, which last dose was repeated every four hours. The mouth was washed with a weak solution of Chloride of Soda. Recovery took place in about six days, while, in one case, which was treated with tonics and alteratives, three weeks ensued before a cure was effected. This treatment is worthy a trial in cases of a similar character.

SPECIES VI. — *Stomatitis Mercurial** — *Inflammation and Sloughing of the Mouth, caused by Mercury.*

The people of this country, unfortunately, are so well acquainted with this variety of sore mouth, that any description of it would seem to be a work of supererogation; nevertheless, a brief account of it will not be out of place to those who desire to learn how to treat it.

* In the social division of labor, it became the business of one class of men to study the human organization and its organic manifestations, in both health and disease, and, also, the therapeutical relation, to this organization, of all external objects, for the purpose of mitigating or removing the derangements and lesions to which it is incidentally liable. In other words, a class of men were, and are still, set apart for the purpose of treating, and, if possible, curing the diseases with which the individuals of society become afflicted. This class is now distinguished from all others by the title of Doctors of Medicine. It is especially their business and their duty to cure, and not to produce disease.

Notwithstanding this high and imperious duty, we have before us, and constituting a part of a nosological system, a highly unmanageable and frequently fatal disease, which, seventy-five times in every hundred cases, is produced by the profession in their efforts to cure the various forms of disease, which, compared with it, are, absolutely, insignificant.

This species of stomatitis does more mischief — produces more suffering, more mortality, in the United States, every *one* year, than the other species have since the creation of man; and is it, like the others, one of God's scourges

After the disease becomes fully developed, those who visit the patient do not require to be informed as to the nature of the disease—it is announced to them, as soon as the door is opened, by the patient's breath. From first to last, this is a distinguishing symptom. The first indication that the patient has, that he is, to use a common phrase, salivated, is the copper or brass-like taste with which the tongue is impressed. The next indication is a sense of soreness of the gums of the inferior incisors, and finally, all doubt is removed by an obvious increase of the saliva.

When the complaint is first made, of soreness of the gums, a close examination will detect a transverse opacity of the gums just below their edges, resembling a white band, attended with some redness and tumefaction about the necks of the teeth. In a little more time, the inflammation extends to the periosteal linings of the alveoli, causing pain when the jaws are closed upon each other; by the same time, the inflammation seems to have affected the muscles of the jaws, as the patient has now to make some effort to open them—there exists in them a sensation of stiffness.

The disease progresses—all the parts in the mouth become

because of man's disobedience? Not at all. He has forbidden the use of Mercury in language so plain, and in terms so strong, that simple must be the man who cannot understand it, and obdurate the one who will not obey it.

We do not assert that the cause of this nosological addition was, necessarily, the work of the medical profession, because we are aware that this form of stomatitis sometimes occurs in the Mercury mines of Spain, and also, that it has been produced in some other commercial situations. But what does all this amount to, when compared with that which we have, almost daily, produced in our midst, by the medical profession? The former is merely a homœopathic globule, while the latter is a genuine Cook dose of calomel.

Is the inquiry made of us: "Do you never use calomel?" We answer—in such cities as Cincinnati, Philadelphia, etc., we would never have occasion to use it, because, in these and similarly-provided cities, we could always command more safe and effective agents. We would use it under no circumstances, except such as would enable us to feel sure of God's pardon for such a violation of his ordinances. We would use it, if we could not do better, and we will use it, when we cannot do better; and we consider it as granted, that all of our medical brethren, in this respect, act as we do; that is, they would not use it, if they could do better, and as they do persist in using it, the inference is plain.

In considering mercurial stomatitis we could not avoid the preceding reflections, and we have written that others may learn how we, who have in this wise sinned, feel upon the subject.—P.

sore from the extension of the inflammation. The cheeks, throat, salivary glands, and tongue are all painful. The last organ, the tongue, is covered with a brownish, or possibly a yellowish, fur, and so swollen as to fill the buccal cavity.

Ulceration commences generally in the gums, but it is soon extended to the jaws, cheeks, throat, tongue, palatal, and ethmoidal bones. All are destroyed, if life continue long enough.

This is a rapid and general sketch of the disease, as it usually appears in adults. Now, suppose the disease to attack an infant, in which, as is very generally the case, the tissues are all soft and incomplete, and then we have such an exhibition as should induce the civil authorities to hold that physician to be guilty of a capital offense, who should administer mercury in any form to an infant.

Prof. Wood remarks, that the "pre-occupation of the system by a very violent disease, presents, in many instances, a complete obstacle to its action upon the mouth."

Is he sure that it does not present an equally complete obstacle to its action upon any part of the system? This is a question of which the profession at large seems never to have thought. We were taught to make calomel, blue-mass, etc., the sheet-anchor of our hope in all congestive forms of disease. We did so until the mortality in that department of our practice forced upon us an investigation of the subject, and then we discovered that calomel is as inert as brick-dust in all congested forms of disease.

Prof. Wood adds, that "in yellow fever, it is sometimes utterly impossible to induce the mercurial salivation."

Yes, and in such cases, and by such a practice, it is as utterly impossible to save the patient. It is, to us, much more than probable, that the cases to which he has referred were highly congested, and if so, the whole difficulty is explained.

We are fully aware the preceding paragraphs are, scientifically and systematically, out of place; but we feel equally sure that those students for whom the work is especially intended, will not only appreciate them, but also our motive for introducing them.

TREATMENT. — From all the cases we have witnessed, we

have but little confidence in any treatment either in this or the ulcerative form of stomatitis — for, notwithstanding the most energetic measures, all hasten rapidly to a fatal result; nevertheless, the treatment suggested for cancrum oris would, probably, be equally indicated under the present affection.

GENUS II. — ANGINA.

SPECIES I.— *Angina Simplex*— *Common Inflammation of the Fauces.*

Under this caption is embraced all the parts which together constitute the posterior walls of the mouth—the parts which we can see when the mouth is widely opened and the tongue depressed. They consist of the half arches, the velum pendulum, the uvula, the tonsils, and the superior portion of the pharynx.

All of these parts may be implicated, more or less, by the various forms of stomatitis, and also by several of the cutaneous diseases, of which we have also treated. All of these will be excluded from the present and the succeeding subjects of this class.

Before entering directly upon the subject before us, it becomes necessary to prepare the reader for judging accurately as to the existence of disease in these parts in very young infants.

From birth up to the exfoliation of the epidermis, the fauces are generally highly congested, and the redness might be mistaken for that of inflammation; hence it is not safe to rely upon the appearance of these parts, before the ninth or tenth day, exclusively—other indications should greatly contribute to the announcement of the fact.

This congestion is usually distributed in a uniform manner, but in some instances, it appears to exist in more or less distinct ramifications. This fact is a strong confirmation of a very prevalent opinion, that there exists an intimate sympathy between the cutaneous and mucous surfaces.

With these remarks, we proceed to the consideration of simple angina, or an erythematic inflammation of the parts which constitute the fauces. The subject might be divided into as many varieties as there are parts, but this would be more technical than useful, as it but seldom happens that all the

parts are not more or less involved; and whether it be so or not, the treatment is the same.

If the disease should make its attack after the first ten or twelve days, its existence will be indicated by a bright-red color and some tumefaction—if the patient be old enough to make known its condition, then the most certain indication will be the expression of some pain in swallowing; if it be under ten or twelve days old, the existence of disease will be indicated by the high color of the parts, being disposed of in separate points or spots. When the disease is a little more advanced, the red surface will be marked by whitish patches, particularly on the tonsils—their whitishness, consisting probably of coagulated lymph, produced by the inflamed follicles. The parts will also become hot and dry, and from their soreness, much pain will attend all efforts at deglutition. If the tumefaction should be considerable, drinks will sometimes regurgitate through the nostrils, and the cry will be somewhat nasal or hoarse. A viscid mucus may be secreted, in the progress of the disease, which may prove very troublesome, and therefore, the nurse should give particular attention to it.

It is common for this disease to run its course without producing fever; but it is sometimes otherwise the case. The inflammation often continues for several days, and gradually declining, terminates generally by resolution. Any other mode of termination is particularly rare in children.

CAUSES.—A moist atmosphere is alone sufficient to restrain the cutaneous function in feeble children, and when of a reduced temperature, it is still more effective, consequently it is very probable that this form of disease is more frequently than otherwise produced by the agency of such an atmosphere.

Some persons possess a strong organic liability to angina under very slight exposures to a cold and damp air, more especially when they are warm or perspiring. It sometimes results, sympathetically, from gastric derangement or disease. When it occurs in a scrofulous or phthisical organization, it is more obstinate and difficult to treat.

Dr. Wood remarks, that it appears sometimes to be of a rheumatic nature, as it occasionally alternates with manifestations of that affection. We regard this remark as being very

probably correct, when the subject is of a rheumatic organization.

TREATMENT.—The treatment of this affection may commence with the administration of some mild evacuant, as the Compound Powder of Rhubarb, the Compound Powder of Jalap in small proportions, or the Compound Tincture of Jalap, which may be repeated occasionally as required—to be followed by a warm, stimulating foot-bath, or if there should be much arterial excitement, a warm bath, and the surface must be bathed with a weak, warm, alkaline solution as often as the severity of the disease may require.

At the same time, the throat and neck should be bathed several times a day with some stimulating liniment, after which a piece of flannel should be bandaged around the throat, and in severe cases, a fomentation of Hops and Mullen leaves. A gargle or wash may likewise be used a number of times through the day, as for instance the following :

℞. Salvia Officinalis,
 Hyssopus Officinalis, āā ʒj,
 Borate of Soda, ʒj,
 Aqua Bulliens, oct. ij. Mix;

let them steep an hour, then strain and sweeten with Honey. Should the child be too young to gargle, this must be applied on a piece of linen rag to the inflamed parts, and some of it may even be swallowed. Sometimes the substitution of two drachms of Alum for the Borax, will have a more beneficial influence.

In very many severe and obstinate cases, a solution of the Nitrate of Silver, five or ten grains to an ounce of water, may be applied two or four times a day with advantage.

The patient should be kept in bed, in a dry and warm room, and its diet should be confined to toast-water, gruel, toast-bread, and similar articles, until all febrile symptoms disappear.

At any time, when the secretions about the fauces become very abundant and tenacious, interfering with respiration, the Compound Tincture of Lobelia or the Acetous Emetic Tincture may be given in sufficient quantities to produce emesis.

SPECIES II.—*Angina Membranaceæ*—*Inflammation of the Fauces with altered Secretion.*

When we see a child refuse the breast, give evidence of difficult deglutition, such as an expression of pain, the existence of this disease should be suspected.

Although this disease commences like ordinary sore-throat, with redness of the fauces, yet, very generally, when first seen by the physician, the fauces will present irregularly-circumscribed, whitish, or possibly yellowish-white or ash-colored spots, which may be confined to some part of the fauces, or scattered indiscriminately over the whole of their surface.

These patches closely resemble the surface of ulcers, while, in reality, they consist of a concreted exudation upon a surface which has suffered no apparent lesion. These concretions are sometimes translucent, dense, tough, or they may be soft and pultaceous.

The tonsils are usually more or less swollen, and the membrane around their borders is red and inflamed. The inflammation and tumefaction extend sometimes to the cervical and submaxillary glands, and even to the parotids.

Like other inflammatory forms of disease, it is sometimes mild, and at others very severe. In the former, the patches are few and more regularly bounded—the fever is probably absent, and the tumefaction very inconsiderable. But, whatever may be the extent of these symptoms, deglutition is very apt to be painful. In the severe forms, deglutition is very painful, and frequently, in attempts to swallow fluids, they are returned through the nose.

When the scabs have completed their process of formation, it is not long before they begin to disappear, sometimes by absorption, at others, by softening and mixing with the saliva, and at others, by separating into irregular patches. They are frequently renewed, and occasionally several times, each becoming more white and delicate, until they finally disappear, leaving on the surface a puriform mucus.

In the nasal passages, the disease sometimes rages with considerable violence, as indicated by fetid discharges from the

nose. Vitiated secretions, often stained with blood, are frequently discharged from the mouth.

In the course of the complaint, the larynx, trachea, and even bronchia are invaded, and lined to such an extent with the concreted exudation as to interrupt respiration, and sometimes to such an extent as to cause a fatal result; and in this tendency consists the greatest danger of the disease.

The disease, in its violent form, is attended by constitutional symptoms, and continues from two to three weeks.

CAUSES.—As to the cause of this malady, we could speculate, as others have done, but for this we have neither inclination nor time. It is the opinion of some that it is contagious—we do not believe it, but we cannot say that it is not.

TREATMENT.—A similar course to that recommended in common inflammation of the fauces may be resorted to with advantage.

A gargle or wash may be used, composed of:

R. Hydrastis Canadensis,
Cortex Rhus Glabrum, āā ʒj. Mix.

Add a quart of water, boil down to one pint, strain, and add one ounce of Alum. This will be found quite valuable in many instances.

Another preparation, which we have often used with decided benefit, is,

R. Strong decoction of Hydrastis, oct.j,
Salt, ʒij,
Pepper, ʒj,
Vinegar, ʒss.

This may be gargled, or used as a wash, and occasionally a portion of it may be swallowed.

When the affection assumes a gangrenous tendency, the parts must be washed with Yeast and Sweet Oil, or a solution of Sulphate of Zinc, with the internal use of tonics and stimulants for the accompanying prostration, as Quinine, Hydrastin, Porter, Wine, etc.; and in this condition care should be taken not to further increase the debility by purgation or diaphoresis.

SPECIES III.—*Angina Tonsillaris*—*Tonsillitis*—*Quinsy*—*Inflammation of the Tonsils*.

In the preceding species, the surface of the tonsils was involved, but now we have to treat of inflammation of their substance. The local disease is either preceded, or immediately followed, by febrile symptoms, or they are introduced together. Rigors usually introduce the fever, which is attended by headache and a strong and full pulse.

A difficulty in swallowing is the first announcement of local disturbance by those who can make their condition known. In severe cases, so painful is deglutition as to produce, apparently, a spasmodic action of the muscles involved in the function; and if both sides are equally involved, the function becomes almost impossible, so much so that it frequently happens, in attempts to swallow fluids, that they are thrown back through the nares.

In consequence of a pressure of these bodies upon the eustachian tubes, the hearing is frequently much impaired; respiration, however, is but little disturbed, except in very severe cases when a sense of suffocation is felt. The fauces, at first, present redness, with tumefaction of one or both tonsils, and when of both, the swelling may increase until they almost meet.

A diffused whiteness may appear upon their surface, or it may be in spots, and probably concremented—a morbid product of the mucous follicles. The uvula is generally much swollen and elongated, and the contiguous parts considerably inflamed.

The disease is not always unattended with external inflammation, with tumefaction of the cervical glands and cellular tissue, to such an extent as to render the inferior jaw almost immovable.

This inflammation, when slight or successfully treated, will end in resolution, but frequently it terminates in suppuration, which, when established, will be announced by rigors, softness of the tumors, and probably by a pale spot, indicating its nearest approach to the surface, and some fluctuation. The sufferings, at this stage, are exceedingly great, but not greater than is the relief which attends the rupture of the tumors.

CAUSES.—Improper exposure to atmospherical changes is,

probably, the most usual cause—the atmosphere is sometimes thought to contain an epidemic cause for it, which may be similar to that of scarlatina and measles, as it frequently prevails with them.

TREATMENT.—The course already named in the two preceding forms of disease, may be pursued in this, with equal benefit, the first indication being, as with them, the removal or alleviation of inflammation.

In the early part of quinsy, an emetic will almost always be found useful, often affording relief at once, after which the previous treatment may be energetically pursued, that is, stimulating gargles or washes, stimulating liniments to the throat, and a warm fomentation of Hops and Mullen leaves, together with frequent bathing of the surface of the body.

In adults, the inhalation of vapor from a decoction of bitter herbs, repeated several times a day, and continued for ten or fifteen minutes, gives relief, and materially assists in reducing the inflammation.

When suppuration takes place, it must be watched to prevent it from causing death from suffocation; and should this be threatened, the tongue must be held down by a spoon or tongue-holder, and the enlarged tonsils be punctured with a lancet, carefully guarded to prevent it from wounding or injuring any other portion of the mouth or tongue.

The diet and regimen must be the same as in the two preceding forms of angina.

ORDER II.

NON-INFLAMMATORY FORMS OF DISEASE IN PARTS LOCATED ABOVE
THE DIAPHRAGM.

GENUS I.—STOMATITIS GANGRENOUS—NECROSIS INFANTILIS—

Death of the Mouth from insufficient Vitality.

This form of disease is, by some, regarded as a variety of stomatitis, and is consequently denominated *gangrenous inflammation of the mouth*. We, too, consider this affection as a modification or variety of that which is called stomatitis,

but, as we do not regard inflammation as being ever a cause of gangrene, and as this form is not preceded by inflammation, we could not treat of it as a member of an inflammatory order.

In constitutions which are too feeble to maintain, successfully, an inflammatory action, gangrene may succeed thrush or aphthæ, and then be mistaken for what is known as gangrenous stomatitis, or in other words, *gangræna oris*; the mistake, however, would be but little in point of fact, because it is very probable that a less degree of vital force in an assault of thrush would have produced *gangræna oris*.

We are informed by pathological anatomists, that this affection never depends upon, or results from, any other form of disease, consequently it must be the necessary result of deficient vital action, and in confirmation of this result, we are informed that the class of children in which it is idiopathically found, are not only feeble, physically, but manifest, mentally, a want of vital energy; the respiration is feeble, the circulation is sluggish, and the cellular tissue betrays a constant tendency to become œdematous, particularly in dependent parts.

Under circumstances of such languor and feebleness, it is not difficult to conceive that the capillary circulation may be replaced by serous infiltrations, which may act almost as effectually in producing the death of a part, as a ligature. The sluggishness which attends ulcers, in highly-lymphatic persons, gives support, in our judgment, to these views; and as our practice must be in accordance with our pathological opinions, it was necessary that we should briefly express them, whether ill or well-founded. But, upon a question of this kind, on which all confess their ignorance, all possible suggestions are admissible.

Prof. Wood informs us that this affection occurs usually between the first and second dentition, but, according to Billard, it occurs in early infancy, and all the cases he has cited appeared within the first month. It is said, further, that it may also attack adults.

Like the ulcerative variety, it may attack, indifferently, any part of the mouth, and, generally, when first observed, it presents a whitish or ash-colored eschar, and as the death of the

part advances, the slough spreads; the breath is very offensive, having a gangrenous odor, and the saliva flows copiously. If the attack be upon the gums, it penetrates the osseous structure, followed by necrosis of the alveolar processes, and the teeth fall out. If the attack be in the cheek, the outside will be marked with an ash-colored spot, which soon becomes livid or black—enlarges rapidly, and speedily, the cheek is destroyed; the mischief however continues—the superior jaw, the palatal and ethmoidal bones are invaded, but rarely destroyed, before death arrests the process.

Sometimes a slight inflammation may be observed to attend this work of destruction, and occasionally a little febrile action may spring up; but it is thought that neither of them precedes the gangrene, but are rather produced by it—in other words, they indicate the feebleness of the system in an effort to arrest the progress of death in the parts assailed.

CAUSES.—Gangrene may supervene inflammation of the mouth, as of any other part of the system; but, in this form, it is not certain that it precedes the mortification at all. One would, *a priori*, suppose that an inflammation capable of producing mortification could not be attended with any doubt, and if such were the fact, there would not be any. Dr. Wood thinks it probable that it depends upon some peculiar morbid condition of the system. Admit that it does, and what does it avail? He has not suggested the character of the supposed morbidity. In children of such extreme debility, we may safely suppose the existence of very imperfect depuration, and hence there is, very probably, “morbidity” enough to overcome the resistance of the vital force, and death of the part, and possibly of the patient, must be the result.

TREATMENT.—Our final success, in this form of disease, must depend upon the use of proper food, stimulants, and tonics; but the local invasion will scarcely be arrested or removed without the use of local means.

This affection, if promptly attended to in its early stage, is generally curable, but that constitutional infirmity, of which it may be esteemed an evidence, will scarcely allow the patient to live more than a few years. If, however, the sloughing has been considerable, a fatal termination may be expected.

The remedies demanded by the constitutional debility and

depravity are the Compound Syrup of Stillingia, which should be given in connection with the following:

R. S. Quinia,
Hydrastin,
Myricin, āā 3ss. Mix;

divide into twenty powders, for a child of six months old, of which three or four may be given daily. Where the child is too young to take the powders, a solution of them or tincture, may be used instead.

With this tonic, alterative, and nutritious course, similar local means may be adopted as in *cancrum oris*.

Madeira wine or good brandy may be used as stimulants, or still better, the Aromatic Spirit of Ammonia; and for diet, the patient may use wine-whey, brandy milk-punch, yolk of egg in wine, rich soups, animal jellies, and tender meats.

GENUS II.—IRRITATIONS OF DENTITION—

Teething.

This subject is too frequently treated as though the teeth were foreign bodies, having neither anatomical nor physiological relations with the system in general, mechanically forcing themselves through anatomical parts, and thereby producing a long train of the most fearful pathological consequences.

Normally, the process of dentition produces no more trouble or suffering than any other one belonging to the system; nevertheless, we are aware that the period assigned to it, is, in civil society, one of disease and death. But are these results to be attributed to the process of dentition? Will any one assert that the several parts of all children, as a general fact, are not in physiological harmony with each other! As very many children do not survive this period, is it not conclusive that they acquired, after birth, a constitutional infirmity, or that one was entailed upon them?

If parents desire children so constituted as to be able to pass through this period of their existence, they should not procrastinate a preparation for it until the period arrives. Physicians cannot save life in a constitution that is incompatible with it. We do not know that any of the children who have died, during this period, from the real or supposed disturbances

of dentition, died, by a single hour, prematurely. If they had lived, their lives might have been wretched to themselves and useless to society. We certainly have a right, in a great degree, to such an inference. If mothers do not like it, let them live all the time, and particularly during gestation, in conformity with the institutions which were ordained for their government.

Finally, in this place, we have to say to both sexes, if your constitutions are gouty, scrofulous, or otherwise unsound, deny to yourselves all the supposed advantages of matrimony; and if you will not do this, then do not complain at the premature loss of your children.

We are pleased to see that medical writers are beginning to attach more importance to the period of dentition, than to this process, in the abstract—to view it as one in which many important revolutions take place in both the habits and developments of the infantile economy.

A healthy child begins to cut its teeth at a certain time, and in a certain order; now, if this time and this order are not punctually observed, is the fault in the teeth? is it in the jaws, or both united? Is it not rather in some constitutional infirmity, which might result in any one form of disease common to infancy, under the provocation of an adequate excitant?

We have said that this is a revolutionary period in the history of our existence, and, like other revolutions, it is pregnant with some mischief and always with much good—the mischief falls upon those who are unable to contend with it, and the good upon those who are, and they always constitute a large majority in the end. As an illustration of this principle, we will invite attention to a few examples.

It may be observed, that while the mother's milk is the indispensable food for the child, that it does not slaver—that its mouth is comparatively dry; but as the time approaches when it must be subjected to a change of food, the salivary glands manifest an increased activity, and this happens in the fourth or fifth month, long before the teeth prove a source of irritation. No other change will be announced before the beginning of the eighth month, when two teeth will appear in the middle of the inferior jaw. All is quiet again for some

time, when two more teeth appear in the middle of the superior jaw; and thus of the others which are yet to appear.

While these changes are going on in the mouth, there are others of equal importance, under a similar state of development, in the stomach, intestines, liver, brain, etc.

Those capable of only a moderate share of reflection, must now perceive that a cause which is capable of materially affecting any one of these important movements must give to the delicate constitution of an infant such a shock as may result in very serious mischief, and more especially so must it prove to the delicate and constitutionally infirm. Thus, it is obvious that the dental process is only one, among many others, which renders the period of dentition one of danger and difficulty to the feeble. It would be, pathologically, just as correct to speak of the various forms of disease of the osseous, cerebral, gastric, intestinal, and hepatic development, respectively, as of the dental.

The fact that physicians have too generally looked to the dental process, during this period, as the source of its dangers, has been attended with much mischief; it has caused them to overlook the other important changes which are progressing, and to neglect the interruptions to which they are incidentally subjected.

Some children pass through all these changes without apparent difficulty. And why should they not? They are all normal. We have heard nothing said by graziers and hunters of dental disease among the inferior animals; and if man had lived, up to this time, as much in accordance with his organic laws, as the inferior animals have, the so-called dental diseases, would now be regarded as of *very rare* occurrence.

As the condition of the teeth with certain people, and of the same people under different circumstances, may serve to shed some light upon the difficulties of the first dentition, we beg leave to invite attention to a few interesting facts upon this subject.

In the south, the plantation negroes have, very generally, fine, white, sound teeth, while those who live as family servants, and have descended, through several generations, from family servants, have, very rarely, sound teeth. They present,

also, other and equally remarkable differences—their heads are larger and rounder.

The Osage Indians have, with scarcely an exception, sound and beautiful teeth, and they are set in large and beautifully-turned arches.

The Cherokee, Creek, Choctaw, and Chickasaw Indians may be said to be as much distinguished for unsound teeth, as the Osages are for sound ones. Of more than one hundred crania of the former peoples, we do not remember one in which all the teeth were sound, and in a majority of them they were very unsound.

The lowest and most down-trodden portion of the Irish population have cramped and irregularly-turned jaws, with teeth tangled and irregularly planted—but they are generally sound.

Now, a proper application of these facts must enlighten us not only upon the subject of dentition, but also upon the modes of life and of civil institutions; but with the two latter we have nothing to do, except so far as they may bear upon the main question.

The plantation negroes have few or no responsibilities—their lives are devoted to three great functions—feeding, working, and resting—their food is proper in quality and never intemperately used in quantity, and among their children the derangements of dentition are few and far between.

In family domestics, there is greater responsibility, and their heads are larger—their duties are more varied, and therefore they are rounder. In their food and beverages they are frequently intemperate as to quantity, and as frequently imprudent as to quality. Their teeth are frequently in a worse condition than is common to the whites, because they are guilty of more excesses. The dentition of their children, to say the least, is such as is common to the whites.

The Osages, at the time of our acquaintance with them, had had no intercourse with the whites, except occasional interviews—their modes of life were simple and temperate and their responsibilities few and light. Their jaws were not precociously ossified—they furnished ample room for all the teeth, and consequently they existed as a useful and a healthy

family to the latest periods of life. Now, we believe that an intelligent, refined, and elevated civilization is just as compatible with sound and beautiful teeth, as the Osage simple savagism. All that is requisite is obedience to the organic laws. The obvious difference between American civilization and Osage savagism is this: the latter have not the means wherewith to infract the organic laws—their existence is in that state of necessary conformity which is common to all of the wild animals. The former, the Americans, have the means to outrage these laws, but have not the necessary intelligence and moral government to avoid it, in the use of them. The only remedy is a wide diffusion of the natural sciences, and until this is effected, we must be content to suffer an abridgment of our own lives and the premature loss of our children. From this fate, religion and church morality, though proper and useful—even indispensable in their places, cannot save us.

The Cherokee Indians, and the other tribes named in connection with them, have, as peoples, homely jaws and mouths, and rotten teeth. Has this always been the case with them? The contrary is very strongly to be presumed.

They have had an extensive intercourse with the most depraved of the white races for more than a hundred years, and wherever this class of white men place their feet, there they plant their vices, and there is no soil so congenial as a savage one. These tribes have succeeded remarkably well in acquiring the vices of the white race, but their organizations were, and are still, too low to imitate, and much less to acquire, their virtues.

We have, for many years, discovered that between social and mental troubles, on the one hand, and deformed jaws and teeth, on the other, there exists the relation of cause and effect, and the same relation exists between the abuses of the appetite and decayed teeth. The Irish population, before-named, very clearly illustrates the first, and so do the Indian tribes last named—but they illustrate both. The second conclusion is illustrated also by our family servants. We have never yet seen crooked jaws and tangled teeth unassociated with mental obliquities.

The preceding facts justify these conclusions—healthy

digestion is attended with sound teeth, and a happily-balanced mind with a harmonious face.

It must now be obvious that dentition, viewed as a separate process, has but little agency in producing the affections usually denominated the "diseases of dentition."

It may be thought by some that we have digressed largely from the intrinsic merits of the question, but if we succeed in making the reader think—in enlarging his views of the subject, such criticism will give us no trouble.

While we do not believe that dentition produces a single disease, yet it serves, under feeble conditions of the constitution, as an exciting cause, occasionally, to some painful attendants, which now claim our attention.

Among those children who are constitutionally necessitated to suffer more or less from the process of dentition, we find the gums tumid and tense, the mouth hot, and the precise position of each tooth is distinguishable for some time before its appearance. In another class, we find the appearance of the teeth to have been preceded or attended by an intense redness of the mucous membrane, a copious flow of saliva, with aphthous ulcerations on the tongue, upon the outer surface of the *avolæ*, and in the duplications of the lips, while the gums themselves may be neither swollen nor painful.

Some degree of febrile action may be looked for in both of these states, with considerable fretfulness, peevishness, and even more direct manifestations of pain. Another morbid condition of the mouth, attended with considerable fever and disorder of the chylopoetic viscera, will sometimes be met with. In such cases the gums become very hot, tender, and swollen, more particularly over some particular tooth, upon which a tumor-like projection is formed. Little ulcerations, having a sloughy appearance, frequently form on the gum, and more particularly about some tooth that has just appeared through it. This affection is painful and difficult to remove; it has been named *odontitis infantum*.

Many persons, acting upon mechanical principles—regarding the teeth and gums as so many nails forced into a piece of leather, and cutting holes upon the opposite side to aid their egress, proceed with the gum-lancet to aid the teeth in making their appearance. They seem not to reflect that this

is a physiological process, and that a mechanical division of the gum cannot advance the appearance of the tooth. The projection of the tooth and the absorption of the gum are but separate parts of the same process. All such mechanical meddling with physiological processes only injures the child, and proves the operator to be uninformed upon the subject.

If there be instances which legitimately call for the use of the gum-lancet, they are exceedingly few—so few, that we cannot reconcile with our physiological judgment in the premises, the idea that such a case ever existed. But if such cases ever exist, they are those in which the operation can do no mischief, and therefore, when we can do nothing else, we may be justified in doing it, because of the possibility that it may produce some relief. Such cases are easily defined—they are those in which the tooth is so nearly through the gum as to produce a conviction that it will be through in one or two days. When the operation is performed, the instrument should be carried to the tooth.

When the object is to relieve tumefaction and inflammation, temporary relief may sometimes be had by scarrifying the gums, and the importance of this operation is, in our opinion, greatly overrated; at all events, it is an operation that differs widely from the other, and is performed for a very different purpose.

There are cases of constitutional disturbance, which may continue for several days and even weeks, during which time the dental process continues perfectly stationary. In such cases, we are told that we might try the experiment of lancing the gums. But why do a useless thing, especially as it will inflict some pain? Has not the morbid irritation, in other parts of the system, suspended the process of dental protrusion and alveolar absorption? We must restore the system to its normal condition by such means as the constitutional disturbance may indicate, then the lancet will not be required nor indicated.

In cases of convulsions for which we can assign no probable cause, the gum-lancet may be used upon the principle that calomel is generally administered—it may do good, although we cannot tell how, or wherefore. It may relieve the convulsions by causing the loss of a drop or two of blood, or it may

do it by producing a change of local irritation, or it may do it by producing a shock to the nervous system, or it may do it by some means which we cannot anticipate—at all events, it will do no harm, and after all, this is perhaps the best reason that can be assigned. If as much could be said in favor of the present indiscriminate use of calomel, we could better tolerate its use.

As the period of dentition is one of revolutionary action, we should be careful not to provoke evils which, by care, may be avoided; consequently, we should make no change in any of the habits or customs of the child during this process, except in the periods of repose—as between the shedding of the two inferior and the two superior incisors, and so on.

In that severe affliction which sometimes happens to infants, denominated *odontitis*, the gum-lancet can do no good, but may do much mischief. The operation would be very painful, and then the morbid inflammation which accompanies the inflammation of the gums, might seize upon the fresh wound and increase the sufferings of the patient.

We are told by writers on infantile disease, that the old prejudice concerning disease of the skin which appears at this period, being salutary in its influence, is not without a foundation in truth; that instances of convulsions or other cerebral signs of mischief have been known to succeed a sudden disappearance of cutaneous eruption.

We admit the facts, and regret to say that we have nowhere seen a rationale of them for the guidance of the student. When this is once had, the student can never hesitate in his course.

Let it be ever present in the mind of every physician, that no organization can manifest, at one and the same moment, two equal or supreme actions. Now, the application of this law will explain the whole difficulty. It will do more—it will sustain a conclusion which we advanced a short time since, viz: the process of dentition produces no disease.

If nothing morbid be in the system, there will be no cutaneous eruption; but the eruption exists, hence there is morbidity in the system. If this eruption be dried up, the constitutional morbidity will seek some other channel for its manifestation. If the existing morbidity of the constitution

be eradicated, then the removal of the eruption will not be succeeded by convulsions or any other manifestation of disease, because there does not exist any disease or morbid quality to manifest. In other words, it is not in the power of the system to maintain a manifestation of an equally morbid condition through the skin and the brain at the same time.

A circumstance in the physical history of the writer will do more to illustrate the principle we have laid down, than any language of definition we can command. When a medical student, at Lexington, he suffered much with dyspepsia—the gastric derangement was manifested in various ways, and sometimes by toothache, but never by any pain or sense of ill being in the stomach. Upon one occasion it was through a most violent toothache—he entertained fear that serious consequences might result upon the extraction of it. After bearing with it three or four days and nights without intermission, he consulted Professors Drake and Dudley, and they expressed the opinion that he might venture to have it extracted; but so strong were his apprehensions, that he endured it four days more, and then ventured and had it extracted. In less than an hour after the operation, he had a violent attack of asthma, and all the rest he obtained, in another week, was in a sitting posture. He had never had this disease before, nor has he had it since.

The principle now being made clear, we can calculate the chances for the little sufferer. If the brain be large and the chest small, or if it be large and prominent in its circumference at the parietal ridge, by all means suffer the eruption to continue, but, if possible, not to increase. If the general health of the child be feeble, the same course may be the most advisable. With the patient before him, the physician can decide better than we can at this distance from him; but of one thing he may be sure—if the cutaneous eruption be cured, and there remains in the system any morbid quality, it is very probable that it will be manifested through the dental process.

But sometimes the eruption spontaneously dries up, and this is because a stronger action is being generated in the dental process. In such a case, it may be advisable to increase

the cutaneous irritation by other means. Finally, the physician must aim at the least of impending evils.

[NOTE.—If physicians really desire to be of service to this class of their patients, they should make themselves thoroughly acquainted with the anatomy, physiology, and pathology of the teeth. The ignorance that obtains in the profession, on this subject, is shameful. We understand thoroughly the import of the language we are using. How could it be otherwise? Ninety-five per cent. of the students have no other advantages upon the subject than works of general anatomy, and a half-hour's lecture from the anatomical professor. It has been our full and thorough conviction that no medical school is complete without a professor of dental anatomy, physiology, and pathology, and he should have received a thorough medical education. We once heard a graduate of an eastern college gravely remark that he had not shed all of his jaw-teeth! We do not know how often infants, suffering from dentition, had been confided to his care!! To be a good and trustworthy physician, one must have a thorough knowledge of the entire field of medical science. We are willing to admit that special practice will give a tact in that department not otherwise obtained; and we contend that those who attend to special kinds of disease, either should not attempt general practice, or else understand the entire subject well enough not to commit the blunders which we every day see. The public should look to its own interest enough to secure this end.]

CLASS II.

MANIFESTATIONS OF DISEASE IN THE DIGESTIVE APPARATUS LOCATED BELOW
THE DIAPHRAGM.

ORDER I.

INFLAMMATORY FORMS OF DISEASE IN THE DIGESTIVE APPARATUS
LOCATED BELOW THE DIAPHRAGM.

GENUS I. — PERITONITIS—

Inflammation of the Peritoneum.

THIS disease sometimes attacks the fetus, and the causes must necessarily be peculiarly obscure, but the revelations of post mortem examinations have discovered two cases that were, very probably, occasioned by strangulation of the intestines.—(Cy. Prac. Med.) The many examples of peritoneal adhesions, which have been detected in infants that lived but a few hours after birth, show that inflammation occurs frequently to intra-uterine life.

The causes of this affection during lactation are, perhaps, not much less obscure than during gestation. We can, in some cases, readily suppose it to be occasioned by improper food, and a few more cases by wet clothing.

Its early symptoms, or those of the first or inflammatory stage are quite obscure, so much so, as to frequently pass unnoticed; and the first information that is had, in most cases, consists of that tension and tumefaction which have resulted from effusion. The slight pains which had previously been manifested were attributed to flatulence or some other trivial affection of the bowels. As in adult peritonitis, pressure upon the abdomen occasions a sensation of soreness to be revealed in some part of the abdomen, but most generally

about the umbilicus. Coughing and sneezing also awaken this sensation. The cutaneous tissue upon all parts of the surface is pale, and the pathognomy of the face indicates languor, suffering, and discontent. At night the child is restless, its sleep is broken and unrefreshing; the appetite is variable; the bowels are usually affected with constipation and diarrhea alternately; the tongue, along its middle, bears a white fur, while the edges are clean and of a pale-red color; the pulse during the forenoon is normal, but toward evening it becomes contracted, quick, and accelerated; the skin, like the pulse, is quite normal in its temperature, until the evening exacerbation arrives, when it becomes abnormally elevated. It is proper to add, that in some cases the abnormal pain is constant, quite severe, and attended with vomiting, and a greater severity of the previously-enumerated symptoms.

The duration of this disease, as in adult life, is very various, but at sometime between the fifth and twentieth day, effusion into the peritoneal cavity takes place, and the abdomen consequently becomes enlarged; and that it is really effused serum, percussion leaves no doubt. The effusion, however, if not arrested, goes on still further to enlarge the abdomen, the skin of the superior parts of the thighs hangs in folds, the extremities become emaciated, and so does every other part of the body, except the face and the parts before-named—and in this extremely reduced and prostrated condition, the patient, under a consuming febrile excitement, sinks into death.

DIAGNOSIS.—It is all important, in some respects, that a mistake in the premises should not be made. The pain of colic is more severe, spasmodic, and intermitting, while that of peritonitis is constant, rarely so severe with infants; and then, again, pressure gives relief in colic, and pain in the other.

Parents, and the unprofessional in general, are apt to mistake this disease for that of worms, and to administer anthelmintics, which perhaps never fail to increase the mischief. As there is no certain symptom for the presence of worms, we must be guided by the presence or absence of those which characterize peritonitis.

PROGNOSIS.—This is not necessarily a fatal disease—under proper treatment, in its first stage, it yields quite readily;

and even in the second, when effusion has manifestly taken place, it may still be arrested by judicious treatment. The great difficulty to contend with is the obscurity of the early symptoms—we cannot always discover the nature of the malady with which we have to contend.

TREATMENT.—The patient should be kept in bed and not allowed to change his position often, and not even the bed-clothes should be allowed to press upon the abdomen. Notwithstanding constipation is a frequent accompaniment, we do not regard it proper to induce free catharsis, for this, in all cases, would be attended by an increase of all the above-named symptoms; and even where laxatives have to be used, they should be regarded as secondary agents; hence, so soon as the disease has been fully diagnosticated, apply warm fomentations over the stomach and bowels or cloths wrung out of the decoction of bitter herbs, which should be as hot as the patient can bear; these should be repeated as often as they become cool, until the active symptoms have subsided, which may be from twenty-four to sixty hours.

To remove the constipation, injections of Starch-water, with a small quantity of table salt and the Antispasmodic Tincture, should be given.

If this combination should not be sufficiently active, and violent pain be present, the Sudorific Tincture may be added. The Neutralizing Cordial may be administered in laxative doses, until mild evacuations have been produced.

We do not regard it necessary to make use of counter-irritation in this disease, but rely entirely upon the above treatment, which, if adopted in the early stage of the disease, there need be very little apprehension of effusions or depositions taking place.

GENUS II.—CHOLERA INFANTUM—

Inflammation or high Irritation of the Stomach and Bowels.

This form of disease is unknown to European society, and but little known in our own country, except in our middle and southern states.

If to those conditions of the mucous membrane of the intestines which constitute feculent and catarrhal diarrhea, we add

a derangement of the liver and an erythematic inflammation of the mucous lining of the stomach, passing sometimes into a state of congestion, we shall be able to form a pretty accurate conception of cholera infantum.

The exciting causes correspond with this synthesis—improper food and atmospheric exposures of the body, as by the use of insufficient clothing. We shall find the evacuations from the bowels and the condition of the stomach still further sustaining the above estimate of it.

The natural fæces are frequently greatly retained, while the others are sometimes thin and serous or watery, sometimes more consistent and consisting principally of mucus occasionally containing some blood. The color is variable, being green, yellow, white, or brown, inodorous or very offensive, but generally having a sourish smell. Sometimes the alvine irritability is such that the ingesta lenterically pass through the intestines.

Although the intestinal actions, in the beginning, may only indicate a diarrhea, yet the stomach is generally affected from the start, and when the attack is violent, the vomitings and purgings are attended with such spasmodic actions as to resemble the cholera morbus of adult life.

The fever, which soon follows the first symptoms, is irregularly remittent, having its highest exacerbations in the evening. The brain is greatly involved, as is manifested by the delirium and even frenzy which attend it. The eyes, by their fierce or languid expression, when awake, and half-closed condition, when asleep, are indicative of the same.

The pulse is generally small, quick, and feeble, or irritated and corded, but rarely full or strong. The thirst is intense and cold water is urgently demanded, and as soon as it is swallowed it is rejected. With all this, there is an unequal distribution of temperature, while the extremities are cold, the body is very hot.

Emaciation progresses in this affection with great rapidity—the complexion becomes pallid, the flesh flabby, and such is the demand of the respiratory function, that the fat becomes entirely absorbed, livid spots appear which finally pass into ulcerations.

The eyes and cheeks become sunken, the lips shriveled, the

integuments corrugated, except on the forehead, and nose pointed. Now, such is the character of the disease, that at this stage it is possible for the patient to recover, but still it is probable that he will not.

In many instances, the vomiting, in connection with the above symptoms, continues to the close of life; but more generally it ceases, leaving a diarrhea to wear out the patient. In still more advanced stages of the disease, several other fearful symptoms are generated—the abdomen becomes tumid or sunken, the mouth becomes moist and aphthous, petechiæ and a small, vesicular eruption appear on the breast, the skin becomes of a dull and dirty hue, and the conjunctiva appears bloodshot. The circulation has become exceedingly languid, the patient very restless and plaintively moaning, coma comes on and terminates the suffering, but not always without symptoms of hydrocephalus.

The vesicular eruption on the breast, the discharge of living worms, and the thrusting of the fingers into the back part of the mouth, as though desirous of withdrawing something, are regarded as invariably fatal symptoms: but the tenacity with which the infantile system clings to life, in this form of disease, most generally, is truly remarkable: the struggle seems to be one of time, and if the physician can stay, even to some extent, the progress of the disease, to a more advanced season, the patient may recover, however improbable it might appear from the exceedingly worn-out condition of the patient.

In duration, the disease varies from a few hours to weeks, and from weeks to months; and in accordance with an old adage, it may almost be truly said of it, that “while there is life there is hope.”

CAUSES.—Much has been said about the cause of this disease—it is maintained by very many that the process of dentition, the existence of worms, and exposure to cold have much to do in producing a predisposition to it. But all of these causes operate upon children in the second dentition, and yet they do not have this disease. Again, all these causes act upon children, under two years of age, during the cold months, as well as the warm ones, and yet they are not assailed by it. The children of other countries, and in the

same latitude, are operated upon as much, by the same causes, as are the children of this country, and yet they do not have the disease. Is it safe, then, to infer that these causes have any agency in the production of it? As it occurs during the process of first dentition, it is very convenient for those who have not candor enough to confess their ignorance, to avail themselves of the coincidence, as of a cloak with which to hide their ignorance.

Prof. Wood, in treating of this disease, says, that the first indication is to remove the causes, and that while these are permitted to continue, the physician can do but little to promote a cure. Now, as we are sure that the causes have not been discovered, we are equally sure that they are never removed unless by accident, hence we may charitably suppose that the astonishing fatality of the allopathic practice, in this disease, is to be charged to the non-removal of the causes.

As the disease is confined to a certain district of country, we hold it to be impossible to remove the causes, but it is possible to remove the child out of the midst of them.

We are told that this disease prevails much more in small courts, alleys, and narrow streets, than in other and better ventilated parts of the city. If this be a fact, one step is made toward a discovery of the conditions under which it is produced. It is our conviction, that, in the south at least, the alleys and narrow streets of the cities, and low situations of the country, are much more exempt from summer and fall diseases than the less crowded and better ventilated portions, and the more elevated ones of the country, so far as regards adult life. Our observations in the city of Baltimore, in Mississippi, Alabama, and Louisiana, but more especially in the city of New Orleans, forced us to this conclusion. If this statement be true, then, we have made another step in the progress of this inquiry.

Again, it is an admitted fact that the disease is measurably confined to our middle and southern states, and will it not be admitted that these states produce a greater amount of evaporation than any other district, of the same magnitude, in the world? If this be admitted, we have safely made a third step.

In the next and last place, it is already admitted that it prevails more in our cities, than in the country, while the

disease of adults, during the same season, prevail much more in the country.

Now, although we shall have safely taken these four steps, it does not follow that we shall discover the precise cause of cholera infantum; but it does follow that we have made a useful advance toward it, and that too, without pressing into our surface that other cloak which was invented to cover ignorance—*miasmata*.

We will now venture another step: to chemists, we believe, it is well understood, that where there is the greatest amount of evaporation, there is the greatest reduction of temperature and the greatest evolution of electricity. The predisposing cause or causes now lie concealed in the preceding facts, for assuredly it is not doubted that all children, during the first two years of their existence, because of the peculiar condition of their systems at this age, are susceptible (not predisposed) to the influence of the cause of this disease, no matter in what it may consist; and by its continued influence, for a time longer or shorter, a predisposition to it will be produced, when a slight exposure to cold, too much cold drink, or an improper article of food may excite the predisposition into action, and cholera infantum is the result.

Admitting that we have truly advanced thus far, it will be admitted, although we have not discovered the *entity* that causes or predisposes to the disease, and although we cannot remove it, that we have shown, that by the removal of the child, even fifty or a hundred yards, we may place it in a condition very nearly the opposite of the one in which it contracted the disease, and this can, most generally, be done.

Inasmuch as we have not got obvious facts to lead us further, and inasmuch as we are entitled to the privilege of indulging in such inferences, from the facts we have, as suggestion may furnish, we will attempt a nearer approximation to the predisposing cause of the disease before us.

The great amount of electricity evolved in ventilated and evaporating situations may be assumed as the cause of the various forms of summer disease in adults, for it is true, that there is not a morass or swamp in our country, about which a man may not live and have good health, provided he will live in the woods, or even sleep in them. About the country

farms there is more evaporation than in our cities, and he is more liable to sickness in the former than in the latter.

Now, with regard to children, it may be assumed that their cutaneous function is rendered imperfect by the surrounding humidity—a humidity that could not injuriously contend with the force of an adult skin. In the next place, may it not be safely assumed that this humid state of the atmosphere impedes, to an equal extent, the pulmonary function, preventing a thorough elimination of the carbon of the venous blood—and preventing such an absorption of oxygen as may be essential to the elimination of the metamorphosed tissues? If these two functions shall be embarrassed, it is obvious that an excess of duty will be imposed upon the liver and kidneys and cause them to fail. If we are justified in the preceding conclusions, have we not found a sufficient cause for the disease?

But we have not yet done. Considering the soft, serous, immature, and developing condition of infancy, may not its organism require that electrical atmosphere which evaporation produces in freely-ventilated situations? To us, this seems to be exceedingly probable.

It appears far more than probable that we shall never be able to understand the *modus operandi* of any of the occult causes in creating predispositions to disease; but it is possible, by a careful observation and comparison of facts, to obtain a knowledge of the conditions under which it is produced. When we shall have acquired this knowledge, although we shall be no more able to change or modify them, we will be able to deport ourselves wisely with reference to them.

TREATMENT. — Although, under Allopathic treatment, this disease proves very fatal, yet, as far as our observation and inquiries have extended, the treatment which we herein lay down as Eclectic, has been almost uniformly successful—the failures being mere exceptions to the general rule.

The agent on which we principally depend for the removal of infantile summer complaint, is the Syrup of Rhubarb and Potassa, which removes nausea and vomiting, when present, acts mildly upon the stomach and bowels, and restores the evacuations to a healthy condition.

If febrile symptoms are present, the whole surface of the

body and limbs should be sponged two or three times daily with a weak alkaline solution rendered stimulant by the addition of a small quantity of whisky or spirits; and in obstinate cases, attended with high fever, the Compound Tincture of Virginia Snakeroot may be added to the above syrup, in the proportion of one part of the tincture to four of the syrup.

Where the discharges from the bowels are frequent, and attended with pain, we employ the following injection, used cold, to be administered immediately after each evacuation, and retained in the rectum as long as possible.

℞. Ulmus Fulva,
Cort. Prunus Virginiana, āā ʒss,
Aqua, octj. Mix,

let it stand two or three hours, and it is ready for use. The quantity to be used as an injection must vary from one to two drachms; larger quantities increase the disposition to strain or defecate, which should always be avoided. Usually, we add a few drops of the Compound Tincture of Virginia Snake-root to each enema, and in protracted cases, we add about one-fourth part of the Saturated Tincture of Prickly-ash berries. This injection has a decided influence in moderating inflammation and relieving pain.

Where vomiting is obstinate and frequent, a Mustard poultice, applied over the epigastric region, will be found useful, in connection with the internal use of the syrup and tincture, as above-named; and if the patient at any time during the disease becomes prostrated, stimulants must be administered, as diluted Brandy, Wine-whey, or Aromatic Spirits of Ammonia.

Cooling mucilaginous drinks should be frequently given when irritability of stomach and accompanying nausea or vomiting are absent.

After the inflammatory or febrile form of the disease has been removed, should diarrhea remain, astringents, with tonics, must be given; as,

℞. Hydrastin,
S. Quinia, āā grs. ij,
Geraniin, grs. xvi. Mix,

Divide into sixteen powders, of which one must be given

every hour or two, according to the urgency of the case, and continued until the excessive evacuations have ceased.

Occasionally, very obstinate cases of cholera infantum occur, in which the employment of Leptandrin, to overcome biliary derangement, in conjunction with the other means already recommended, will exert a highly-beneficial influence.

The child's clothing should be often changed, the diet should be light, as boiled milk, with powdered Cinnamon added, or milk thickened with Wheat or Rice flour; and, if possible, it should be removed from the city to the country, or at all events, some distance from its home; and, under all circumstances, it should not be confined within a closed room, but should be exposed as much as possible to the air, but not to the influence of the sun's immediate action.

ORDER II.

NON-INFLAMMATORY FORMS OF DISEASE IN THE DIGESTIVE APPARATUS LOCATED BELOW THE DIAPHRAGM.

GENUS I.—GASTRIC INDIGESTION—DYSPEPSIA.

This affection, in infants, as in adults, is marked by every grade of importance, because attended by every possible variety of gastric disturbance. Infants often throw up the milk they have swallowed, which appears sometimes unaltered, and at others, coagulated into masses of greater or less size. Sometimes it amounts only to simple regurgitation, attended with a little cough or hiccough. Sometimes, when it sucks too much, the contractile irritability of the stomach forces a portion of it up; and, lastly, when true indigestion is present, the matters thrown up show that such action has not been had upon them as would indicate a normal digestive process.

While considering this subject, it should be recollected that the form of this viscus, in infants, and its position in the abdomen, are such as greatly to qualify it for the discharge of its contents, and hence the great ease with which they vomit.

The vomiting of infants, however, must not always be regarded as indicative of disease in the organ itself. It is a symptom of pleural or pulmonary inflammation, of the onset of cerebral disease, and frequently a precursor of the various forms of eruptive disease. It may also attend infantile diarrhoea, and upon the use of improper food, it may attend signs of intestinal disturbance.

The stomach, in this period of existence, frequently becomes so irritable, as uniformly, almost, to reject its contents; but this symptom is not always essential to the fact that this organ is incapable of performing, with necessary ability, its proper function, as attending circumstances will generally render very obvious.

Sometimes, in infants, while no indications of intestinal disturbance exist, they will be suddenly attacked with violent vomiting, and although the stomach thus indicates an exceeding irritability, its desire for the breast is unabated—it sucks but to vomit, which may happen immediately or be procrastinated for a short time.

CAUSES.—When the child has been usually healthy, such attacks as these may, very generally, be attributed to some derangement in the health of the mother or to some indiscretion. She has perhaps been absent and allowed it to be absent from the breast longer than usual, and then allowed it to indulge to excess, or the child has been fatigued, exposed to the sun, or been roused, in an untimely manner, from its sleep.

TREATMENT.—No matter what the cause has been, the child should be taken from the breast, and a proper course of treatment commenced, not only for the removal of the existing irritability, but also as a prophylaxis.

A tea-spoonful of cold water may be given to it, which, if retained, may be followed in thirty minutes by one or two more; and if these shall also be retained, then a little isinglass, or something else equally simple, may be dissolved in water and administered in the same way.

If the vomiting shall have ceased for eight or ten hours, it may be allowed the breast or cow's milk diluted with water, but they should be used with the same temperance.

If the stomach bear this course for ten, twelve, or more

hours, depending upon the violence of the case, then it may be restored to the breast, under the precaution to guard against full indulgence.

But should the vomiting be preceded or attended by intestinal disturbance or gastric symptoms of a more serious character, a resort to medicine is indispensable.

In connection with the treatment above prescribed, a very mild aperient, as the Syrup of Rhei and Potassa, or a small portion of Leptandrin, may be given; and if the vomiting shall have continued for several hours, the application of a Mustard or Cayenne Pepper poultice to the epigastrium will be likely to afford much relief. The physician must now rely upon his acquaintance with the general principles of the profession.

Normally, the appetite is proportioned to the demands of the system—if therefore, the process of development shall measurably cease, the only obvious symptom may be anorexia. The child seems to have no special disease, but it gradually becomes paler and leaner. This state of the patient may consist in an inability of the stomach to digest even the smallest quantity of nourishment. But even this, under such circumstances, only indicates a general pathological state, which may be, as it often is, produced by a chamber too elevated in temperature, and badly ventilated.

In dyspeptic conditions of the stomach, anorexia is more an attendant symptom, than is a gormandizing desire to feed. It often happens that the child never appears satisfied except when sucking; and when it has indulged to repletion, it seems very uncomfortable until it has disgorged it. The relief which this process brings is immediately followed by a renewed desire to suck again.

As regards the bowels, in these various phases of dyspepsia, nothing specific can be laid down; but this much may be said—anorexia is generally attended with constipation, while diarrhea as commonly attends over and constant feeding; and yet the evacuations do not appear to indicate, to even a remote extent, the amount of deranged gastric action under which they are produced.

It is far better to remove constipation in infants, as well as in adults, by soap suppositories, than by any internal admin-

istration of medicine. Frictions with some mild liniment, often prove advantageous.

When the repeated vomitings have an acid exhalation, and are attended with a ropy mucus, and this too in the absence of evident signs of gastric inflammation, it will be proper to administer an antacid. In this disease, medicine may palliate or remove a symptom, but it is not wise to rely upon it, to make a cure. This has to be effected by a proper attention to diet, rest, ventilation, and temperature. It will be the duty of the mother to note the effect of every variety of infantile diet upon the child, to discover the one that will best agree with it.

This gastric irritability may be produced by poison, which may have been associated with its food, from having been prepared in improper vessels, or it may have handled and placed in its mouth some metallic instrument coated with a poisonous oxide; but such occasions, while infants are at the breast, must be extremely rare.

We should never omit to give particular attention to the color of the matters vomited up, because they may indicate their history; when they result from indigestion, and their seat is the stomach, they are very generally white, but sometimes a little yellow, and more frequently semi-fluid than coagulated.

Mothers and nurses usually regard the regurgitations of milk, by infants, as ominous of health — no doubt but that it serves frequently as a prophylaxis, for in such instances, its ingesta was too abundant for the demands of health. But when the milk is retained, and then firmly coagulated and rejected with pain, we cannot form a very flattering conclusion.

The casein of the milk is the first to coagulate, but then its coagula is never hard, like that which is vomited up. The normal coagula, when formed, is speedily dissolved by the gastric juices, and adapted to the purposes of assimilation; but this coagulation is a very different matter from that into which milk spontaneously runs. This is a step in the process of putrefaction, and generates a free acid which has none of the solvent power of the gastric juice, but impedes digestion, and hence the impropriety of feeding a child on sour milk.

Now, it is possible, indeed very probable, that the stomach of an infant may be so deprived of its normal juices as to aid, by its temperature, the spontaneous process of acetous fermentation to the production of pain in the stomach and diarrhea—for certainly, it can be a matter of no difference as to whether this process is effected or commenced before or after its admission into the stomach.

The vomiting of coagulated milk is frequently thought to indicate the existence of too much acid in the stomach; but this is not necessarily the case. It may only indicate such a condition of the stomach as disqualifies it for producing its juices in a sufficient quantity, or in a normal quality. In either event, the milk passes into the acetous fermentation.

In all cases of this kind, the eructations are nauseous and the breath offensive. In cases of this kind, and they are certainly distinguishable, the mineral acids will be highly serviceable. Some of these cases are attended with diarrhea, which consists of pale, light-yellow evacuations—indicating a demand for an alterative medicine.

A majority of infantile forms of disease, happening before the period of weaning, may generally be referred to some cognizable or occult morbus in the mother. In the infant, disease, beyond all question, exists, and it depends upon the exciting cause, as to whether it will be manifested in the form of dyspepsia, cutaneous eruption, or by disease of some other character.

The various forms of disease which attack children, after they are weaned, are not to be regarded, necessarily, as independent of the same remote cause.

GENUS II.—INTESTINAL INDIGESTION.

We frequently see children afflicted with diarrhea without the presence of enteritis or inflammation of the intestines. They are reduced to a state of marasmus and death by a want of nourishment, and yet have had a full supply of food—they die of hunger, with an insatiable appetite and plenty of food that was agreeable to its taste.

This diarrhea consists of a thin white mucus, frequently containing lumps of coagulated milk, unaltered by the stomach or the intestines. After death, the mucous membrane of the

intestines is found to be without color throughout its whole extent, unless there shall still exist, in various parts of its surface, patches or streaks, retaining its normal color and condition.

The causes of such defective nutrition may exist in the nature of the milk, in the manner in which it is taken, or in some great defect in the digestive system of the child. The milk of one woman may agree very well with some children, and be at the same time destructive to others; if, therefore, the quality of the milk be suspected to be the cause, some other food should be tried, such as cow's milk and water, or barley-water and milk. Such a change is sometimes found to be successful.

If the milk flow very rapidly, the child may receive more than a proper supply at each time the breast is given to it, and as this practice would do more mischief than even a slight insufficiency, it should be carefully attended to. If the difficulty is inherent in the child, it may not be impossible to find such food as will agree with and nourish it. At all events, when the child manifests continual hunger, seizes the breast with great eagerness, has a pale face, and withal is becoming more and more emaciated, we should attend immediately to both the quality and quantity of the food, because medicine can do no permanent good so long as there shall be a fault in either of these respects.

GENUS III.—COLIC.

This complaint, in young infants, is peculiarly distressing, and, with many, it is an occurrence of every day. It is divisible into two distinct varieties, one of which may be occasioned by a considerable variety of causes, as badly-digested food (which very frequently happens to those infants who are artificially fed), or some morbid quality in the milk of the mother, which may result from disease in her system, or from outbreaks of temper; and when this is the cause, the consequence upon the child may be convulsions.

This form of disease may also arise from the neglect of the nurse to keep the extremities warm. Flatulence is the result of all these causes, except the last, which appears to affect, principally, the muciparous follicles, and to a degree that may

result in inflammation. This variety of colic has been denominated *erratic*.

The other form of this complaint is called the *periodical*, because it returns pretty regularly at a certain period of the day, and usually in the afternoon. This variety of colic does not appear incompatible with the health, as it usually quits the child at the age of three months, and hence it gives old women no concern — they call it the “three-months belly-ache.”

The cause of this colic is greatly concealed, but not more so than are the adequate means for its removal. Constipation is a very constant attendant upon it.

Erratic colic may occur at any time of the day and without being traceable to any probable, and much less certain, cause. Its subjects are most generally, those of a feeble constitution. The patient may take the breast with a good appetite, and the mother may furnish an abundance of milk, but because of some morbid quality in the latter, the stomach of the former becomes filled with a fluid which it cannot digest, but which becomes acid, producing in the child, probably, a diarrhea with green stools, or they may consist of ill-digested food, without any abnormal frequency. If the food be improper, whether of milk or otherwise, the child will manifest uneasiness as soon as it has done feeding. The abdomen becomes tense with manifestations of much pain. From these symptoms the patient is frequently and suddenly relieved by an eructation of gas, or by its passage through the large intestines.

The treatment, of course, should commence with a removal of the cause, if it can be discovered. If acidity attend the disease, Magnesia will be indicated, more especially if a tendency to constipation shall exist.

Sweet Oil, by the teaspoonful, three or four times a day, often proves a valuable remedy.

Particular attention should be paid to the quality and quantity of the food, and if the patient be fed entirely by the breast then a suitable change should be made in the diet of the nurse. If it be nourished by the spoon or bottle, an occasional emetic will be useful to empty the stomach of indigestible crudities.

If the colic have been produced by cold or wet, it will be

advisable to use a pediluvium, and at the same time warm fomentations with a flannel cloth with frictions with a warm hand to the abdomen. These means usually produce a revulsion to the surface. This course, with antispasmodics, as warm Mint teas, will generally suffice to remove the difficulty.

Upon the periodical form of colic, constipation is a very common attendant, and yet purgative medicines do not prove advantageous; but when it has been more than usually protracted, it may be advisable to administer an injection of molasses and water, or try a suppository of soap.

The difficulty which is here intended to be removed, is confined to the large intestines, and therefore it can never be advisable to produce an increase of action in the stomach and small intestines to reach it—mischief must be the result. As this disease observes periodicity, it may be broken up by the prompt use of antispasmodics; but for the suffering of the child, the disease should produce but little concern, as it is not dangerous.

GENUS IV.—DIARRHEA.

This form of disease is peculiar to no age, yet it does, beyond all question, occur most frequently during infancy; and it is proper to remark, further, that it is liable, at this early age, to assume a more dangerous character than at a more advanced one. In it the discharges or evacuations are more frequent and liquid, and sometimes more copious than is normal. Inasmuch as it is occasioned by very different causes, and obtains under very different conditions of the system, it has, for the purpose of elucidation, been divided into several species, as the Feculent, Bilious, Mucous, Chylous, Lienteric, and Chronic.

SPECIES I.—*Feculent Diarrhea.*

This is treated of as the most simple form of the disease—in it the condition of the bowels appears, pathologically, to consist in such an irritation as may be produced by the direct action of offensive or acrid matters upon the mucous lining of the intestinal canal. Even the ordinary contents of the bowels may prove so irritating as to produce excessive peristaltic action, because of a pre-existing irritability of the mucous membrane, occasioned by unknown or inappreciable causes.

When it originates in the irritation caused by acrid or otherwise offending causes, acting directly upon the mucous membrane, it will most likely cure itself by the expulsion of the offending substances; but when it results from some morbidly-irritable condition of the bowels—such as will not tolerate the presence of their most mild and ordinary contents, then we must not expect a spontaneous cure. When, therefore, the disease has existed three or four days, we may conclude that it depends upon some pre-existing morbid irritability of the bowels, rather than upon the presence of acrid substances.

In this form of the disease, the evacuations resemble those which are usually produced by the action of cathartics—they are feculent, but less so when the immediate cause is the morbid irritability of the bowels, and under such circumstance it is more difficult to manage, because the irritation sometimes amounts to a subacute inflammation.

CAUSES.—The most frequent cause of this form of diarrhea consists in improprieties of diet—the patient may have fed too much, or the food may have been highly indigestible; in either event, some of the food may pass through the stomach in a comparatively crude condition. From the presence of such food, the bowels may become so highly irritable, as, after its expulsion, to refuse to retain the most bland that can be given; when the cause depends upon an incompatibility between the child and the mother's milk, the diarrhea is feculent throughout its course—depending upon a simple irritability of the mucous lining of the bowels. That constitutional irritation which attends dentition, not unfrequently occasions this form of diarrhea.

TREATMENT.—In this form of diarrhea, the Syrup of Rhubarb and Potassa, given in doses suitable to the child's age, will be all the therapeutic treatment generally required; it should be given every hour until it has operated upon the bowels, after which its repetition every three or four hours will be sufficient.

The child's diet should be especially attended to, and should consist principally of boiled milk, boiled milk-and-bread, toast-water, boiled Rice, Sago, etc., but no meats or vegetables, except the Rice.

If at the breast, the milk should be examined, and if found unhealthy, the nurse must be changed, or the infant weaned ; but if healthy, it should not be allowed to suck as much at a time as generally.

Children sucking, should, as a general rule, be allowed no other food than the breast milk.

SPECIES II.—*Bilious Diarrhea.*

This form of the disease not unfrequently appears in the feculent character, through that irritation which the presence of bile produces upon the mucous membrane of the bowels ; but the color of the evacuations will indicate the source of the irritation. The appetite is frequently good, although the digestive powers of the intestines are much enfeebled.

In this feculent form of diarrhea, nausea and vomiting occur more frequently than in any other, and it generally supervenes feeding, and rarely fails to end in colic pains and brisk purging.

But the true bilious form of diarrhea betrays a much higher grade of biliary action than is indicated by the preceding symptoms. The bile is produced in an excessive quantity, and it is reasonable to suppose that its quality is greatly vitiated. The evacuations are mixed with much yellowish or greenish-looking bile, and generally the urine is much stained with it, and after having progressed a few days, the eyes and skin assume a jaundiced appearance.

So far as can be inferred from the appearance of the bile, it is entirely normal in quality but extremely copious in quantity ; but in other instances, its appearance is very unnatural and its quality is so acrid as to occasion considerable burning and irritation about the anus. When the evacuations are of this character we should be prepared to apprehend a super-vention of some inflammatory irritation of the mucous membrane.

It is not uncommon for the bile, in the course of several days, to become replaced, entirely, by an aqueous fluid or secretion, which is attended with considerable irritation of the stomach. This suspension of bilious secretion is, most probably, occasioned by a venous congestion of the liver.

CAUSES.—A modification of bilious diarrhea is frequently

induced, among children of two or three months of age, by such feeding as is calculated to tax heavily the digestive apparatus, such as bad milk and other improper food. Attending this variety there is apt to be much acidity of the intestinal canal, which occasions griping. The evacuations are usually of a bright-green color.

But bilious diarrhea, properly so considered, usually occurs about the close of the hot season, and is occasioned, in our opinion, by such a debility of the cutaneous system, as incapacitates it for the discharge of its function, and consequently the liver is vicariously called into action to depurate for the skin; and this cutaneous debility is occasioned by solar heat, under circumstances of defective evaporation, as a humid atmosphere.

Our observations in the south have brought us to the conclusion, that adults, in the hot season, do best in a humid atmosphere, and children in a dry one. For the reason above assigned, populous cities and marshy districts are more productive of the disease than situations of a contrary character. Under such circumstances, other etiologists consider malaria to be the cause. In the first place, we deny the existence of such a poison; and in the second, nothing is gained by the admission of it—it affords no pathological information. To say that malaria caused it, is equivalent to saying that it had a cause.

TREATMENT.—The treatment recommended for cholera infantum is that which we have found the most successful in this form of diarrhea.

SPECIES III.—*Mucous or Catarrhal Diarrhea.*

This form of diarrhea differs widely, in some respects, from the two preceding—this is measurably confined to the large intestines, while the two former more especially belong to the small ones.

The evacuations are sometimes pure mucus, but in the more severe forms of the disease, the mucus becomes opaque and whitish. With the mucous discharges, there is frequently mixed feculent matter—sometimes mucus alone precedes the feculent matter, and at other times succeeds it.

The discharges are occasionally, especially when they are

opaque or streaked with blood, as is sometimes the case, preceded by tormina — they are very rarely copious, but sometimes not only frequent but attended by tenesmus and some straining. So far as we know, it only becomes requisite to aggravate it so far as to make inflammation requisite for its removal.

CAUSES.—This form is regarded by some as a catarrhal affection of the bowels, and, like other affections of the kind, is produced by cold, acting upon an excited condition of the cutaneous exhalants, whereby their function is suppressed. We do not, however, regard cold alone as the cause of this variety of diarrhea. Any cause calculated to suspend the function of the cutaneous exhalants may cause it; consequently, under some modifying influence, it is produced by the same general cause that occasions bilious diarrhea. When thus occasioned, it is more liable to pass into dysentery, or to become chronic.

SPECIES IV.—*Chylous Diarrhea.*

It would have been, in our opinion, much more intelligible to have nominated this form of diarrhea, the *anti-bilious*, because bile is as certainly absent in this form, as it is present in the second. This is not all: it is evidently a misnomer to call it chylous, because the immense quantity that is sometimes evacuated precludes the idea of its being chyle.

This form of diarrhea is indicated by light-colored evacuations — such as are of a dirty white, sometimes almost of a milky whiteness, and when very abundant, they considerably resemble the rice-water discharges of cholera. With adults, one of the symptoms is an uneasiness in the abdomen, with very little acute pain, but with great depression of spirits. From this symptom, we would infer a very positive congestion of the liver and portal circle at large. The skin is more or less shrunk, and a feeling of prostration is a very general attendant.

There does not appear in the course of this form of disease, a single symptom that indicates the existence of an intense irritation. The hands and feet are cold — the process of nutrition is greatly suspended, and hence the work of emaciation

progresses with much rapidity, and when considerably procrastinated, the skin becomes sallow.

In view of the above facts, the most probable conclusion appears to be, that the mucous membrane of the small intestines is highly congested, and that the chylous-looking evacuations are effected for its removal.

In the character of the evacuations, in the feeling of distress and prostration, in the shrunken condition of the skin, in the absence of bile, in the rapid emaciation of the patient, and its indisposition to terminate favorably, it has a considerable resemblance to cholera.

CAUSES. — The immediate cause may be a suspension of hepatic action, and consequently the chyme is not converted into chyle—not adapted to nutrition, and it is rejected with serous matter. But it seems to us more probable that there is a failure of the liver to perform its function, and possibly the lungs, also, more or less; consequently, there is too much carbon in the blood, which, in not being eliminated, has become to act upon the system as a foreign body, producing catharsis or this particular form of diarrhea.

This would seem to be the most probable conclusion, if the experiments of Tiedman and Gmelin are to be relied upon—namely, that bile is not necessary to the production of chyle. We think it very questionable whether the remote cause of this form of diarrhea can be determined with much probability of accuracy. The exciting causes may be cold and improper food, and the remote may be the same as in bilious diarrhea, in conjunction with some peculiarity of constitution, possibly some debility of the pulmonary system—a question which our observation has not settled.

SPECIES V. — *Lienteric Diarrhea.*

This form of diarrhea appears, in some measure, to be allied to the preceding—such a modification of it as might be supposed to follow a reduction of portal congestion, with an increase of gastric irritation. As it consists in a rapid transportation of alimentary matter through the bowels, almost unchanged, it would seem to have its principal source in the stomach, for as soon as food enters it, it is forced, by a rapid

peristaltic motion, into the intestines, which as speedily hurry it through at their inferior extremity. The appearance of the evacuations leaves scarcely any room to doubt that the gastric secretions are suspended.

The evacuations, in this form of diarrhea, consist of the food which was taken but a short time previously. At the onset of the disease, however, the evacuations do not occur until several hours after eating; but as it advances, if uninterrupted, the intervals between the reception of the food and its evacuations become more and more brief, until at last there is no delay between its reception by the stomach and its rejection by the anus.

In this condition of the malady, the patient feels considerable uneasiness in the epigastric and umbilical regions soon after eating, which, in a little time, is followed by severe tormina, and to this succeeds, with much haste, a diarrheal evacuation of offending matter. The griping, however, is not a necessary symptom—it is frequently absent, in whole or in part.

The appetite is variable, sometimes voracious, at others capricious—loathing some articles of food, and desiring such as may be very objectionable, from its crude, acrid, or exciting nature. Pressure upon the abdomen but rarely produces a sensation of pain or soreness; but jumping or jolting, coughing or sneezing does. In some instances, the evacuations are mixed with dark-green bilious matter, or with a fluid resembling a solution of verdigris.

This form, like the preceding, indicates no disposition to terminate favorably, and consequently it should never be neglected. It is very apt to appear as a sequelæ to the other varieties, but more frequently of dysentery, and this fact would seem to strengthen the pathological views above advanced. When, under such circumstances, a single article of diet is known to pass through the bowels, unchanged, the commencement of this form may pretty safely be suspected; and in a short time the suspicion will be found confirmed, by a similar passage of other articles of food, until finally, all the ingesta, indiscriminately, is rapidly passed through the digestive apparatus, without the least indication of having been acted upon by them.

In lenteric diarrhea, the stomach must be regarded as the principal seat of the disease, and consequently it may be esteemed as a violent attack of indigestion.

CAUSES.—When it appears as the sequelæ of other forms of disease, the exciting causes may be an improper exposure to cold, or improper food, or a voracious use of such as may be otherwise unexceptionable; it is, however, more apt to appear, under all circumstances, gradually—having its remote cause in food of an irritating character, or in improperly managed diarrhea in either of the preceding forms, or dysentery.

SPECIES VI. — *Chronic Diarrhea — Weaning Brash.*

It is thought that either of the preceding forms of diarrhea may, in children, become chronic, but we are much inclined to the opinion that the bilious variety, caused as it is by direct and sympathetic impressions, is the one which most generally runs into the chronic state, or may assume the chronic form. The general character of the evacuations, in our judgment, sustains this opinion. This conclusion is rendered very probable by the fact that every variety of vitiation in the function of the liver would tend to the maintenance of the diarrhea.

An undue continuance or neglect of the feculent and catarrhal species may so weaken and impair the mucous membrane of the intestines, as to render it more obnoxious to the vitiated secretions of the liver and all other sources of irritation.

It is usually announced by griping pain and purging, with yellow or green evacuations, depending upon the violence of the attack. If this introduction of it shall be neglected for a few days, retching, and sometimes vomiting of bile-colored dejections, will follow. These manifestations will soon be succeeded by a loathing of all kinds of food — attended, as might be expected, with restlessness, thirst, fever, emaciation, and softness of the flesh.

After the existence of the disease for some weeks, peevishness, griping pain, and a discontented expression of the face, become the distinguishing features of it. In the progress of the disease, great and many changes become manifest in the evacuations; their color is sometimes normal—at other times, ash-colored and slimy, and sometimes, without knowing the

history of the affection, we would judge it to be lienteric. It terminates fatally, sometimes, in two, three, or four weeks, but in such instances, it is apt to be by convulsions, occasioned by the intense irritation of the stomach and bowels; but a fatal termination rarely occurs under six or seven weeks; and then again, the disease may continue three or four months and terminate in convalescence.

In consequence of the frequent coincidence in the appearance of the teeth and this disease, and the prevalent impression that a diarrhea at such a time is salutary in its influence, it is frequently neglected, until it results in the loss of the child.

In this country, it mostly prevails in July, August, and September, and it is more frequent and fatal in damp summers and situations, than in dry ones. It is thought by some, that in the beginning of this disease, the mucous membrane of the small intestines is alone diseased, and that as it advances the liver, through intestino-hepatic sympathy, becomes involved, and by the increased quantity of its secretion, or the morbid character of it, the disease becomes more permanently established and much increased in violence.

We cannot indorse this view of the subject; if the disease commenced in the mucous membrane, what caused it? It has not been shown, nor even contended, that it is either feculent or catarrhal in the beginning, and if it be neither of these, then it must be sympathetic, and if sympathetic, then the morbid condition is really somewhere else than in the mucous membrane of the intestines. These considerations, in connection with the season of the year in which it usually occurs, induce us to believe that it is more probably a result of an enfeebled condition of the skin acting through cutaneo-hepatic and intestinal sympathy.

The difference between the two opinions, thus advanced, in view of the treatment, is one of immense importance; the latter indicates a course of practice which could not do mischief, while that indicated by the former might reach the symptom, but missing the cause, the disease would not be removed.

Dr. Cheyne informs us that *post mortem* examinations

reveal many contractions and intus-susceptions in the alimentary canal, from the stomach downward—that they are of a spasmodic kind, and they are without “adhesions or even the marks of inflammation.” In these facts we have one of the reasons why we have treated of diarrheas as non-inflammatory forms of disease.

In this form, the liver, being highly excited, secretes much bile, but the excess of this action sometimes exhausts it, and then it produces but little, if any; consequently, the evacuations will sometimes have a clay color, and the disposition of the patient will be more restless and gloomy in this respect. As a prophylaxis, children should not be weaned during the months in which this form of disease mostly prevails.

The conviction is very general, in the popular female mind, and with many physicians, that the great danger of diarrhea, to our infantile population, is in consequence of teething. We have in several instances repudiated this idea, and we are gratified to find that we are sustained by such authority as that of Dr. Cheyne. He observes:

“Notwithstanding my most diligent inquiries, I have seldom been able to deduce any of the derangements of the infantile system from teething; and I have been inclined to think, that those physicians who have represented this function (dentition) as teeming with danger, have not accustomed themselves to that careful investigation, without which these diseases cannot be understood. The weaning-brash, I have the strongest reason to believe, has no connection with teething, farther than they sometimes meet in the same child. I have known this disease, in many instances, where the gums were neither swelled, indurated, nor inflamed, and where there was no salivation, nor the least appearance of pain in the mouth. I have seen it where children were cutting their teeth easily; and where many of them came without difficulty before weaning; still the disease has supervened. But, perhaps, the strongest argument that can be used, would arise from the observation, which I have frequently made, that this disease occurs in children of three months; and I have often known it several months before teething came on.”

CAUSES.—Fruit is very generally included among the

exciting causes of diarrhea in the summer, consequently, we feel that a few remarks, of a discriminating character, are required of us.

We are of those who possess an abiding faith in the wisdom of all the plans and purposes of nature. Now, inasmuch as fruit is a product of the summer and fall only, and as it was intended for food, rather than as a temptation for us to sin, we believe that it is adapted to us during the season of its maturity. Then, it cannot, in the abstract, be pregnant with danger to those who use it properly and temperately. To use it properly, it must be ripe, and being ripe, we should divest it of the skin, which was intended for its protection and development, and not for food. It should not, furthermore, be used with our habitual food, particularly in its raw state. To use it temperately, it should not be taken in such quantities as to supersede, to any extent, the demand for the usual or more nutritious food. Furthermore, it should be taken about midtime between the regular meals. It is our conviction that ripe fruit, thus used, would prove a prophylaxis against the various forms of disease incidental to the season.

As to chronic diarrhea, it may be stated, that a procrastination of early attention, improper treatment, and a neglect of the predisposing and exciting causes must be regarded as the general sources of this form of disease.

The children most liable to it are those who have been prematurely weaned, and after weaning, improperly fed, as to both the quantity and quality of the food; but it is not confined to these, for it frequently obtains under widely different circumstances, and therefore, in many instances, atmospheric.

TREATMENT. — The treatment of these various forms of diarrhea is so nearly alike, that we will consider them under one head.

In the early part of the attack, the Syrup of Rhubarb and Potassa will generally be found fully sufficient to check the excessive discharges, allay vomiting when present, and remove the morbid condition on which the diarrhea depends; it may be given every hour or half hour, in doses suitable to the child's age, and continued until it exerts a laxative effect, when the intervals between the doses should be lengthened

to two, three, or four hours, according to the urgency of the case.

In addition to this, especially when the symptoms are obstinate, or have been of long duration, the whole system should be bathed with a warm alkaline bath, two or three times a day, and this should be pursued in all the forms of diarrhea, whether acute or chronic.

If nausea or vomiting are present, and do not cease on the continued use of the syrup, a Mustard poultice, applied over the epigastrium, will be found advantageous, and a few drops of Paregoric may be added to each dose of the syrup.

If there is much fever, with pain in the stomach or bowels, the Compound Tincture of Virginia Snakeroot, in proper doses, may be administered every hour or two, with the application of warm fomentations to the bowels, of bitter herbs, or even warm water.

When there is prostration, with cold extremities, increased heat of the head, and restlessness, applications to the head, as for instance, the Cooling Lotion, with rubefacients to the extremities, and some stimulating liniment over the whole length of the spine, will be beneficial, and their employment should be persevered in.

When tenesmus is present, a few drops of the Compound Tincture of Virginia Snakeroot, in one or two teaspoonfuls of cold water injected into the rectum, immediately after each alvine evacuation, and retained there as long as possible, will speedily remove this disagreeable symptom. In some cases, the wet-sheet around the lower part of the body, will prove a valuable auxiliary.

The above course of treatment will generally be found effectual in overcoming any of the forms of this disease, but, should they run into the chronic form, other means will be demanded.

Thus, in chronic diarrhea, the following has proved invariably successful, as far as we have used it:

R. Syrup of Rhubarb and Potassa, ℥iv,
Hydrastin, grs. xii. Mix.

Of this, a teaspoonful may be given every hour, to a child five years old, or proportionate to its age. If the discharges

are frequent, twenty grains of Geraniin, or even more, may be added to the above compound.

Tonics should be administered whenever they can conveniently, and we prefer the following:

R. S. Quinia,
Hydrastin,
Leptandrin, āā grs. v. Mix,

And divide into fifteen powders, of which one may be given every two, three, or four hours, to a child four or five years of age.

In the mucous form of diarrhea, as well as in the chylous, alterative doses of Podophyllin and Leptandrin combined, or of Leptandrin and Geraniin, or of Lupulin and Geraniin, according to the indications present, will always be required before permanency of cure can be expected.

In lenteric diarrhea, after the employment of the means heretofore named, tonics and astringents will be required to effect a cure; a combination of Quinia, Hydrastin, and Geraniin may be used, or Cornine and Geraniin.

But, notwithstanding the therapeutical treatment, if the prophylactic is neglected, the disease may prove fatal.

Especial attention should be given to the diet of the child, which must be mild, nourishing, and digestible, avoiding everything calculated to irritate the stomach, or which the child dislikes. All candies, preserves, and nick-nacks must be imperatively prohibited.

The dress should be adapted to the season, and be kept as clean as possible.

Exercise in the open air, if the condition of the child will permit, is of the utmost importance, and if this is impossible, the chamber in which the child is confined should be well ventilated, allowing fresh air to circulate freely through it.

GENUS V. — INVERMINATION —

Worms.

It has been asserted and contradicted, that so long as children are exclusively fed and nourished by the breast, they will be exempt from worms.

Dr. Dewees says, that he never saw children under ten

months of age have worms, and only two so early as that, and they were weaned at the age of four months.

The worms which have been most frequently found in the human system have been divided into three genera: I. *Helminthia Alvi*, alvine worms; II. *Helminthia Podices*, anal worms; III. *Helminthia Erratica*, erratic worms.

Of the first genus there are five species, and they inhabit the stomach and the intestinal canal. The indications of their presence are, foul breath, pale countenance, sore and irritable nostrils, emaciated body, swollen abdomen, and a pungent and gnawing pain in the stomach; but it is proper to add, that all of these symptoms are simulated by other causes of irritation, and hence we have no certain diagnostic symptom. The first species of the genus has been described by Dr. Good, as follows:

SPECIES I.—*Ascaris Lumbricoides*—*Long Round-Worm*.

“The head of the long, round-worm is slightly incurvated, with a transverse contraction beneath it; mouth triangular; body transparent; color, light yellow, with a faint line down the side; gregarious, vivacious; from six to fifteen inches long; inhabits principally the ilium, but sometimes ascends into the stomach, and creeps out of the mouth and nostrils; occasionally travels to the rectum, and passes away at the anus.”

SPECIES II.—*Tricocephalus*—*Long Thread-Worm*.

“The body of the long thread-worm is, above, slightly crenate; beneath smooth, finely striated on the forepart; the head obtuse, and furnished with a slender retractile proboscis; tail, or thinner part, twice as long as the thicker, terminating in a fine hair-like point, about two inches long; in color, resembles the preceding; gregarious, and found chiefly in the intestines of sickly children; generally in the cæcum.”

SPECIES III.—*Tænia Solium*—*Long Tape-Worm*.

“In the long tape-worm, the articulations are long and narrow, with marginal pores, by which it attaches itself to the intestines, one on each joint, generally alternate; ovaries arborescent; head, with a terminal mouth, surrounded with

two rows of radiate hooks or holders; and a little below, on the flattened surface, four tuberculate orifices or suckers, two on each side: it is from thirty to forty feet long, and has been found sixty. Inhabits the intestines of mankind, generally at the upper part, where it feeds on the chyle and juices already animalized. Is sometimes solitary, but commonly in considerable numbers; and adheres so firmly to the intestines, that it is removed with great difficulty. It is said to have the power of reproducing parts which have been broken off; but this assertion wants proof. The animal is oviparous, and discharges its numerous eggs from the apertures on the joints. The broken-off joints have, when discharged, the appearance of gourd seeds; and it is hence denominated gourd-worm by many medical writers."

SPECIES IV.—*Tænia Vulgaris*—*Broad Tape-Worm*.

The articulations of the broad tape-worm are short and broad, with a pore in the center of each joint, and stellate ovaries around them; body broader in the middle, and tapering toward both ends; head resembling the last; inhabits the upper part of the intestines, and feeds on the chyle; from three to fifteen feet long; usually in families of three or four.

SPECIES V.—*Fasciola*—*Fluke*.

The body of the fluke is flattish, with an aperture or pore at the head, and generally another beneath; the intestines fluxuous; ovaries lateral; hermaphrodite and oviparous."

Of the preceding five varieties, the first much more frequently occurs, but they are all occasionally met with in practice.

GENUS II.—HELMINTHIA PODICIS—

Anal Worms.

Of this genus there are three species; they live just within the verge of the anus, and frequently prove exceedingly troublesome, particularly by the itching they occasion at the anus. The species are:

SPECIES I.—*Ascaris Vermicularis*—*Thread-Worm*—*Maw-Worm*.

“The head of the thread-worm is subulate nodose, and divided into three vesicles, in the middle of which it receives nourishment; skin at the sides of the body firmly crenate or wrinkled; tail finely tapering, and terminating in a point; gregarious; viviparous; about half an inch long; sometimes it gets into the intestines, and occasionally as high as the stomach.”

SPECIES II.—*Scarabacus*—*Beetle-Grubs*.

“This species has not been accurately described. The following seem to be the chief: gray larve, with yellow legs, and ferruginous head; have six feet; are annulate, hairy, vesicular at the end of the abdomen, and furnished with a horny head.

SPECIES III.—*Æstrus*—*Bots*.

“The larvae of the æstrus, breeze, or gad-fly, are called bots, and are of a round figure; pale green; tail obtusely truncated; head tapering; mouth horny, with two lips, and two re-curved black claws on each side of the mouth.”

GENUS III.—HELMINTHIA ERRATICA—

Erratic Worms.

Of this genus but little is known. According to Dr. Good, they are, “the larves of insects, introduced by accident, and without finding a proper habitation in the stomach and intestines, producing spasmodic colic, with severe gripings, and occasionally, vomiting or dejection of blood.”

Worms have probably been the torment of children almost ever since they commenced having an existence, and yet, we are exceedingly ignorant upon the subject. We have thought it proper to place the preceding descriptions before Eclectic students, under a hope that they may be induced to observe and to investigate the subject. It presents a large and promising field for professional labor, usefulness, and fame. If, in nature, there be a symptom which indicates the existence of either of the varieties of the first genus, to the exclusion of others, it has not been discovered. Nay, more, if there be

a symptom which could certainly distinguish the existence of any of the alvine worms from other sources of irritation, it has not been discovered. The first and only certain indication we can have of their existence, is the seeing of them.

CAUSES.—The source of intestinal worms has been for a long time a subject of discussion; it is maintained by one party that their origin is external to the human body—that they are from germs or ovæ of preceding animals of the same species; the other party maintains that they are spontaneously or equivocally produced by some species of affinity in the matter which exists in the system—that the first which appears in the system was produced by a living organic parentage. We have neither time nor space for the discussion of this subject; but we may remark that they exist—that the species had a beginning, and no matter when this beginning was, it was without organic parentage, and so far as we know, they can now commence without organic parentage, as readily as the first of the species did. Our investigations have satisfied us that it is about as difficult to change a species as it is to produce one, and hence it is probable that we shall incline to the opinion of their spontaneous origin until their representatives shall be found outside of the human system.

Of the same nature is the inquiry into the origin of some contagious forms of disease. We do not expect to witness a case of small-pox or syphilis which did not have its cause in some previous organization; but how did the first case originate? May not either or both of them still originate spontaneously, when or under the circumstances that first produced them, which were certainly equivocal? In water, at a temperature of 156° of Fah., at the Hot Springs, Arkansas, animals live and manifest an active life, and yet, in this same spring, fish, snakes, and toads instantly scald to death. Where were these little animals before the appearance of these springs?

A healthy condition of the system appears to be, in a very great degree, incompatible with the existence of these parasites; it is reasonable to infer then, that they did not produce all of that depravity of the system with which they are found to be associated. Their existence, therefore, may be attributed to *o* ; *generis* depravity in the function of the mucous

membrane of the intestinal canal; and, although no age is exempt from this depravity, yet it much more frequently obtains with children above the age of infancy. Their existence is usually attributed to an accumulation of mucus, feeble digestion, badly-regulated diet, a damp atmosphere, etc. Much of this appears to be assumed—we find them under such circumstances, generally, but it does not, therefore, follow that they were produced under them—much of this derangement may have been produced by them.

We have found worms under circumstances, where, *a priori*, we would not have expected them, and the reverse. It seems to us that a helminthic diathesis just as certainly obtains in society as a scrofulous one; but, at the same time, we do not doubt that the causes above named, serve greatly to aggravate this innate predisposition, more especially the anti-electrical condition of the atmosphere, for this we regard as the most fruitful source of juvenile disease. In such an atmosphere, no amount of care as to diet, and no amount of medical attention can prevent the generation of these parasites, during the proper age of the child for their existence, or during the inadaptation of the system to the atmosphere.

TREATMENT.—Many agents have been recommended for the removal of worms, and the majority of them fulfill the indications for which they are given, yet their mere expulsion is seldom followed by any permanent benefit, if the condition of the intestines is not likewise especially attended to, by the employment of tonics or other agents suited to their particular condition.

Pinkroot is, perhaps, as much relied upon for the removal of worms as any other simple agent. It is usually given combined with Senna, or with the Compound Powder of Jalap, in the proportion of from five to ten grains of the powdered Pinkroot, to the same quantity of the cathartic, and which may be given in molasses, or infusion, and repeated two or three times a day, to a child three years old, for several successive days. Infants several months old use it in the form of infusion.

A very excellent vermifuge, which we are in the habit of employing, is made as follows:

- ℞. Castor Oil, ʒj,
 Oil of Wormseed, ʒj,
 Oil of Anise, ʒss,
 Tinct. of Myrrh, ʒss,
 Spirits of Turpentine, gtts. x,
 Croton Oil, gtt. j. Mix.

To a child three years old, a half teaspoonful may be given every two hours, for ten or twelve hours, or until active purgation has been produced.

Another vermifuge, which has been used effectually, is:

- ℞. Oil of Wormwood,
 Oil of Tansy, āā ʒj,
 Spirits of Turpentine, ʒiss,
 Castor Oil, ʒij. Mix.

The dose for a child, three or four years old, is a teaspoonful every hour until it operates.

A preparation, composed of a medley of agents has been found very useful in the treatment of intestinal entozoa, but on account of its complexity, we have never used it—it is prepared as follows:

- ℞. Lime Water, oct. j,
 Oil of Wormwood,
 Spirits of Turpentine, āā ʒj
 Tinct of Myrrh, ʒijj,
 Essence of Anise, ʒij,
 Molasses, oct. ss,
 Oil of Tansy, ʒss,
 Castor Oil, oct. ss,
 Croton Oil, ʒj. Mix.

The dose of this preparation is a teaspoonful two or three times a day.

For the removal of the thread-worm, *ascaris vermicularis*, in addition to the above internal remedies, infusions or decoctions of bitter substances must be injected into the rectum, as of Aloes, Bitter-root, etc., or an enema of Spirits of Turpentine, one drachm, in milk, one gill.

But, although, as before said, these agents may expel the worms, but small advantage will accrue to the patient, unless others are employed to restore the impaired condition of the

intestines to one of strength and health. For this purpose, we prefer the following preparation :

R. Hydrastis Canadensis,
 Calumba,
 Chamomile Flowers,
 Prickly-Ash Berries,
 Sassafras Bark, aa ʒss. Mix.

Upon these articles, coarsely bruised, pour one pint of boiling water ; let them stand until cold ; then add one pint of Sherry or Port Wine, and sweeten with loaf-sugar. The dose to a child, one year old, is a teaspoonful three times a day ;—and with this, a proper attention should be paid to diet, allowing no indigestible substances to be received into the stomach, or such as acidify.

GENUS VI. — COSTIVENESS —

Tardy Action of the Bowels.

Constipation of the bowels, in children, as well as in adults, is frequently produced by certain varieties of ingesta, and it may also be constitutional ; when, therefore, a physician is consulted upon the subject, his first business is to ascertain whether it is, and has been, habitual with the child, or only occasional, and irregular.

With some persons, a certain kind of food invariably produces constipation. With many adults, sweet potatoes have this effect ; and with many children, all the preparations of rice and boiled milk will produce the same result. That which will produce this effect in one child, may not do it in another ; hence, it becomes the duty of the nurse or mother, as the case may be, to notice the effect which the various articles of a child's food produces upon its bowels, and when the one is discovered which causes such a result, its use should be discontinued.

Nurses who are defective in patience, and still more so in honesty, frequently keep concealed about their persons, an article far more mischievous than any article of food—we allude to laudanum. Some mothers, not knowing the consequences, are guilty of administering to the infant the same

drug, or some preparation of it, and for the purpose of keeping it quiet. Parents should exercise an unceasing vigilance over their nurses with reference to this subject.

Suppositories and injections are much more applicable to such accidental cases of constipation than medicine, because they excite the inactive part, which is usually the rectum, without preternaturally exciting the whole intestinal canal; but when these means fail, then it may be proper to administer some mild purgative, as Olive Oil, Castor Oil, the Compound Tincture of Jalap, or Syrup of Elderberries.

When the constipation is constitutional, and entirely compatible with the health and happiness of the child, it is recommended to let it alone.

The constitutional habit is such, sometimes, as to produce a stool but once in every eight or ten days; we have seen men of sound health whose bowels manifested the same peculiar constitutionality, but we have always found an unpleasant circumstance connected with it—without a daily change of linen, and a frequent washing of the skin, an unpleasant odor was constantly emanating from the surface to the annoyance of others. Now, in view of this circumstance, we would not let the child alone which had such a constitutional peculiarity.

As we believe that the vegetative organs can be trained or educated, as well as the animal, we would attempt to train the bowels of such infants to a more decent habit: and this may be done by a proper attention to diet. The Graham bran-bread principles, properly applied, might effect the desired change. For the bread, substitute mush, which might be variously seasoned to please the taste.

GENUS VII.—PROLAPSUS OF THE RECTUM.

The mucous lining of the rectum is attached to the next outer membrane of the bowels by loose cellular tissue, and in the affection, above denominated, this mucous membrane separates so far from the one to which it is attached as to permit a duplicature of it to protrude out of the body, forming what may be called a thick red ring at the anus.

In a feeble child, it may be produced by crying or by coughing, the large stools which sometimes attend purgative

medicines, and also by any bowel disease which is attended with tenesmus.

The greatest danger that attends this affection is a liability, through neglect, of its becoming a habit of the part that may continue through life. We, at one time had the acquaintance of a gentleman, thirty years of age, whose memory could not reach back to the time when he did not have a prolapsus of the rectum every time he attempted to stool, and every time before he arose, he had the prolapsus to reduce. In view of such a consequence, it is obvious that the utmost attention should be given to it when it occurs.

As the sphincter of the anus acts as a ligature upon the protruded part, consequently, when it has been down for a few hours, its appearance becomes truly alarming; the stricture prevents the return of the venous blood, and then it soon becomes swollen and inflamed—assuming a livid color, which may pass to a black one. The stricture becomes so confirmed, as to give rise to much trouble sometimes in the reduction of the protrusion.

When an attempt is to be made to reduce the prolapsed bowel, the child should be placed across the lap of the nurse, with the chest more depressed than the hips, the part should be lubricated with Sweet Oil or fresh Lard, gentle pressure should then be so conducted as to force a portion of blood from it, and when it is sufficiently reduced it may then be urged by pressure, made with the fingers, upward and backward, until it passes within the anus. The tumor, when reduced, may be retained in its normal position by the use of a T bandage, and compresses wetted with cold water. If it should manifest a tendency to descend or prolapse as often as defecation shall be attempted, the circumference of the anus should be supported during the discharge of this function.

Sometimes the prolapsed portion becomes so large, through a failure to return it in proper time, that any attempt to reduce it, before the blood contained in it is disgorged, would prove not only mischievous but entirely unavailing. For this purpose, the child should lie upon its back, with its hips higher than its shoulders, and its knees drawn up, with the part uncovered, and kept wet with lead-water.

BOOK III.

THE FUNCTIONS AND PATHOLOGICAL RELATIONS OF THE CEREBELLUM.

PART I.

ON THE FUNCTIONS AND PATHOLOGICAL RELATIONS OF THE CEREBELLUM.

CHAPTER I.

FUNCTIONS AND RELATIONS OF THE CEREBELLUM.

SECTION I.

A SUMMARY OF THE PREVAILING OPINIONS ON THE FUNCTIONS OF THE CEREBELLUM.

WE have been convinced for many years, that the animal functions of the entire system are, in a great measure, if not entirely founded in, or controlled by, the cerebellum; and hence, for the convenience of a name, we have designated its functions by the title of the "VITAL FORCES."

This investigation will expose physiological and pathological relations which hitherto have not been thought of; and, although we do not profess to have advanced beyond the portals of the subject, yet from this position we are enabled to obtain a shadowed glimpse of the immense advantages which it is destined to confer upon pathology and therapeutics. By the time we shall have done with this chapter, it will be seen, that many of the most obstinate and fatal diseases to which humanity is heir, are associated with, or founded in, particular portions of this viscus.

Dr. Carpenter has, in the fifth American edition of his work, set forth, in a very impartial manner, all the evidence that has been had concerning the cerebellar functions, and then drops the subject, simply because the contradictory and entangled character of the evidence, thus far obtained, will not justify a conclusion. In order that our readers may have a just idea of the darkness which envelopes it, and the value of our contributions, we refer them to that work, after they shall have perused the following brief statement of the evidence to which we have alluded.

Flourens discovered that incisions into the cerebellum produced, in the animals experimented upon, no indications of sensation, but that when it was being removed by slices, they became restless, and that when the organ was entirely removed, they "had entirely lost the power of springing, flying, walking, standing, and preserving their equilibrium." According to Magendie, a deep wound inflicted upon the cerebellum on both sides, irresistibly forces the animal to move backward. The section of one of the *crura cerebelli* causes the animal to fall upon one side and to "roll upon its longitudinal axis."

"Foville, Pinel-Grandchamp, and Duges have regarded the cerebellum as the center of common sensation." Dr. Carpenter seems to regard it as possible that the cerebellum is the seat of the "muscular sense." It is probably well known to the public that Dr. Gall and his disciples have maintained that the cerebellum was the organ of the sexual desire or instinct. Thus we find that one party contend that the cerebellum is the organ of certain influences over the muscular system; that another regard it as the organ of common sensation; and a third believe it to be demonstrably certain that it is the organ of sexual love. This, in brief, is the sum of what is known upon the subject, and which, so far as regards general utility, amounts to about nothing.

We are of the opinion that there is not a question in natural history better established than that the sexual desire inheres in the cerebellum; but this conclusion is not incompatible with the idea, that the same viscus may contain the organs of many other functions. The experiments of physiologists and the varying development of this viscus, induced Mr. George Combe to suspect that it might perform a plurality of func-

tions. Amativeness, or the sexual desire, however, he conceives to appropriate much the larger portion of it, and the balance, he supposes, to be concerned with muscular motion.*

But four years before he announced his suspicion, we had discovered as much; and two years before this event, we had demonstrated the independence of two powers, beside that of amativeness, and determined their organs. That volume of the *Journal* which announces his suspicion, contains a paper from us, which details a definite account of the organ and function of Muscular Motion.

But upon what principle he supposed the larger portion of the cerebellum to be employed in the sexual function, we cannot imagine; because, if this viscus perform a plurality of functions, it must be admitted, as with other divisions of the encephalon, that while in one person the sexual function might appropriate the larger portion of it, yet, in another person, another function might appropriate the larger portion of it; and this we have found to be absolutely the case.

We believe that no one of the experimental physiologists have detected any indication of the existence of the sexual function in the cerebellum; and, for this obvious reason, vivisection is not the means of exciting such a manifestation of it. Their failure to produce such a manifestation of this viscus, viewed in connection with the results of the comparisons they have made between the cerebelli of stallions, geldings, and mares, leaves us no room to wonder that they should conclude that the cerebellum had no agency in the sexual function. But when it shall be shown that it performs two other functions, which are just as indispensable to procreation as amativeness, then the whole aspect of the question becomes changed. The reason why a mare or gelding shall have a cerebellum as large as that of a stallion will become obvious.

No important pathological purpose has been achieved by the investigations that have been made into the functions of the cerebellum; so true is this, that if we had nothing to add to what is now known upon this subject, we could have no

* American Phrenological Journal and Miscellany.

reasonable apology for introducing it in a work which treats professedly upon the diseases of children; and yet, we feel that we could not dispense with it. We think it much more than probable that the time is not very far distant when all human diseases will be founded upon the functions of the cerebellum and base of the cerebrum.

SECTION II.

THE SPECIAL FUNCTIONS OF THE CEREBELLUM.

INTRODUCTORY REMARKS.

WE regret that our convictions of propriety will not permit us to present, in this place, the evidence upon which we contend for the independence of some of the functions of the cerebellum; but, fortunately, if this independence be admitted, so far as our present purpose is concerned, the proof is not requisite. For this reason, and the fact that in a forthcoming work on cerebral physiology, the proof of the functions, to which we allude, will be found, our regret, at our present necessity, is considerably mitigated. For the sake of the relations which we shall unfold, and the arguments which we shall found upon them, we ask our readers, for the time being, to consider the functions that we shall name as being established, and their organs as demonstrated. With this understanding, we proceed with our subject.

1. *Amativeness, or Sexual Desire.*

The proof that this is an independent desire, and that it inheres in the cerebellum, is now before the world, and when we shall, before concluding our treatise on the cerebellum, remove the objections which physiologists have suggested, it will stand as an undisputed and an undebatable proposition.

The function of this faculty is a desire for congress with the opposite sex, and its object the perpetuity of the race. In these two relations it acts as a *sine qua non*. Hitherto the magnitude of the cerebellum was regarded as the measure of its power; and this is most emphatically true; but this language contains, with reference to the function in question, a

very great error, unless we restrict the meaning of the word *power*, to the abstract strength of the desire, without any reference to a manifestation of the function. Some individuals have an insatiable and an uncontrollable desire, and yet very little procreative ability. Dr. Gall maintained that the procreative ability of a male animal was indicated by the magnitude of the cerebellum, and in this he was correct: but he did not know that there were other powers as indispensable to successful coition as desire, which is the whole function of amateness. Let it be remembered, then, that *desire* is the whole of the function of this faculty.

The organs of this propensity are situated immediately on both sides of the median line, and are, therefore, in contact. So far as we now know, if an equally balanced cerebellum, between the mastoid processes, be divided into five spaces, the middle one will represent the location of the organs in question. In proportion to the development of the neck backward, at its junction with the occiput, is the development of these organs. When they are largely developed, and those, which are to be treated of, are small, the neck, posterior to the mastoid processes, will be narrow or thin.

II. MUSCULAR MOTION.

The function of this faculty is simply a *desire* of muscular resistance and counter-resistance, or a love of muscular motion. Those who have the organ large cannot brook sedentary habits without an impairment of health. The faculty does not imply a power to use or to command the muscles with facility or ability; but a high endowment of its organ has, incidentally, a powerful influence upon the whole system. The motion that is requisite to secure its gratification, results in a full development of the osseous, muscular, respiratory, and arterial systems. Many persons who have it rather feebly developed, live very active lives, but this results from other motives than a love of motion. Many of this class, furthermore, are very active, and use their muscles with great precision. The power of controlling or guiding the muscles, we refer to the organ of weight or momentum—an intellectual faculty.

All men will be lazy or indolent who have not the requisite motives to industry; hence many men, with large muscular

motion, are very idle, but at the same time they will not be stationary. When these organs are small, the chest is flat and contracted, the muscles are flaccid, the spine and shoulders are drooping and the movements of the body are dragging.

It is a matter of some surprise that physiologists, particularly of the phrenological school, should not have had this faculty suggested to them, long before it was, in consequence of its indispensable relation and importance to the execution of the function of amativeness. There is not in the life of a male animal another function that requires as much muscular energy as the copulative. We have invariably observed, among men, in connection with a high endowment of this power, a disposition to resist whatever was not agreeable to them. We are, furthermore, disposed to regard it as the source of the faculty of *touch*, which we conceive to consist in a sense of resistance; but the perception that is founded upon its function, is made by eventuality; because the weight or resistance, and the hardness or softness of a body, are but conditions that attend its existence.

The organs of this faculty are located in both sides of the cerebellum, midway between the median line and the mastoid processes, respectively; and when large, produce a fullness of the corresponding portions of the neck. These organs, like those of amativeness, are usually more developed in males than females.

III. ANIMAL SENSIBILITY.

Inasmuch as a delicate sensibility of the cuticular surface is just as indispensable to the success and the enjoyment of the sexual congress, as either or both of the preceding powers, we are again led to marvel that its existence was not long since suspected and even discovered. Indeed, without this faculty, there could be neither success nor enjoyment—it is absolutely indispensable to the perpetuity of the race.

The function of this faculty appears to consist in a desire for such impressions as can agreeably excite the sense of feeling, and, consequently, in proportion to the development of its organs, is the impressibility or sensibility of the cutaneous surface. Those who have them large are sensitive to all external causes of impression, as atmospheric conditions—they

dread surgical operations, and suffer much under their infliction.

It has, perhaps, ever been remarked, that females are usually less gross than males, more indifferent to atmospheric conditions, and complain less under surgical operations. In the fact that they have generally the organs of this faculty much less developed than men, we find an explanation of these differences between the sexes.

The organs of this faculty are located immediately behind the mastoid processes, and upon the lateral sinuses, and when large, they give a fullness to the corresponding portions of the neck. When all three of the powers of the cerebellum are well or largely developed, the neck, at its junction with the head, is broad and full.

IV. PHYSIOLOGICAL INFERENCES.

When we reflect upon the care which has, in all parts of organic nature, been manifested for the preservation of species, we cannot rationally conclude that three powers, so essentially constituting a *sine qua non*, as they do, in the procreative function, would have been located otherwise than as we find them—in close and co-operative relation to each other. That they are independent powers, no one can entertain a doubt; between either two of them there is no affinity.

A moment's reflection upon the preceding cerebral faculties, will discover a satisfactory solution of the difficulties that have existed for some time among physiologists. We can now understand how it may be that individual mares and geldings, by having large organs of motion and sensation, may possess a larger cerebellum than a stallion. And we can anticipate how the proprietors of stallions may, by stable confinement, render them incompetent to discharge, with general success, the function for which they are maintained.

We are, furthermore, by a knowledge of the functions of the cerebellum, enabled to analyze some of the most difficult questions that can arise in mental science. For the purpose of illustration we will present one or two.

A Mr. Kennedy (the measurement of whose cerebellum will be found in table on page 30), who was hung in Maryland for the violation of a young girl, remarked, while standing on the

drop, that such an intercourse with female children, had been the leading passion of his life, and that he had been several times guilty of it. Now, we feel sure that the psychologist does not live who can, without the developments we have made, give a satisfactory explanation of this fact. Suppose his Amativeness very strong, and Muscular Motion and Animal Sensibility both very feeble, which were the facts, as we have his skull, and it becomes obvious that he would not desire an adult woman, because he would not associate with her the idea of so close a copulative intercourse—a condition so indispensable to both his success and his enjoyment. He would avoid an adult for another reason: he would expect resistance, which would be incompatible with his feeble sense of resistance.

A very feeble condition of the organs of Animal Sensibility explains, also, the fact that onanists will leave the bed of a wife and resort to self-pollution. All the persons whom we have known to suffer from excessive or intemperate indulgence with the opposite sex, had, relatively, large Amativeness, and feeble Muscular Motion and Animal Sensibility; and the philosophy of it appears to be about this: the former power does not so sustain the function and the latter does not so abridge it, as to prevent exhaustion.

Furthermore, when all three of the cerebellar organs are well developed, the excitement of the whole viscus may be expended in motion, or in the ordinary pursuits of life, or even by social intercourse with refined society, provided the social sentiments are well developed. But when Amativeness alone is fully developed, the whole tendency is salacious, and frequently so importunate as to impel to excessive venery or to self-pollution.

We do not believe that all of the functions of the cerebellum are yet discovered—we are much inclined to think, that, connected with Muscular Motion, or situated in the midst of the convolutions appropriated to the functions of this faculty, and that of Amativeness, are two others, in which inhere the desires of urination and defecation. We do not attribute that motive power to the cerebellum which is essential to the execution of these functions, or that of Muscular Motion; but merely the desires—the source of their respective volitions.

The respiratory desire Dr. Grimes locates in the middle lobes of the cerebrum; and, although we think that we have seen some strong confirmations of his opinions, yet, all *a priori* reasoning would locate it with Muscular Motion in the cerebellum. If we could conceive the medulla oblongata as being the seat of any one desire, we should be inclined to locate the respiratory one in it; because we have uniformly found it large in those persons who manifested the most anxiety about this function—namely, consumptives. And as a very general fact, it will be found that those who have the most feeble endowment of the organs of Muscular Motion and Animal Sensibility, and the most feeble muscles, have the medulla oblongata as large as that of the most muscular men.

This relation of the medulla oblongata and the organs of Muscular Motion and Animal Sensibility, very clearly shows that the cerebellum has no direct agency in the respiratory function, and yet, without its incidental influence, a high endowment of the muscular system and of the respiratory function cannot exist. The mutual dependence of these relations is rendered apparent by the table previously referred to.

In the course of many years of diligent observation, we have not found a well developed thorax associated with a small endowment of the organs of Muscular Motion; nor have we, in the same time, discovered a dry, contracted, and parchment-like skin, and condensed subcutaneous cellular tissue, associated with a full development of the organs of animal sensibility.

CHAPTER II.

PATHOLOGICAL RELATIONS OF THE CEREBELLUM.

FOR many years, when we have found a large endowment of the organs of Muscular Motion and Animal Sensibility, but more especially of the former, we do not remember to have been disappointed, in a single instance, in predicting the existence of a rheumatic predisposition. We have seen syphilitic and other symptomatic varieties of rheumatism under contrary circumstances, but never the idiopathic; and from

what we have learned, we conclude that gout is a disease of the same family

Dr. Wood, speaking of rheumatism, says, that "there must be a peculiar state of system predisposing to this form of disease. There must be a rheumatic diathesis. In what this diathesis consists, has not been discovered. There are no signs by which its existence can be detected, with an approach to certainty." We contend that it exists in a high endowment of the animal muscles, with considerable sensibility of the skin. And, in confirmation, to some extent, of this opinion, are the following remarks of Dr. Wood: "Children under ten years, and adults over sixty, are seldom attacked; and men are more subject to the disease than women." Women, as we have before remarked, have all parts of the cerebellum less developed than men, and so have boys, and in men of sixty they are on the decline.

We have not been able to learn of a single instance of active congestion of the brain, terminating either in apoplexy, palsy, or epilepsy, which, when of an idiopathic character, was not associated with a high endowment of these organs.

We have not known erysipelatous inflammations, of an original character, to be unattended by a similar endowment.

Attending this condition of the cerebellum, is a corresponding liability to cutaneous diseases; while those of a contrary organization contract such diseases with difficulty, and with an equal difficulty are they cured.

In proportion to the development of the two organs above named, will be the liability to, and the progress of, cancerous diseases.

And, on the contrary, onanism is associated with a feebleness of these organs, and particularly of that of Animal Sensibility. Those boys who are seduced into this practice, will spontaneously abandon it, unless they should be organically predisposed to it.

We have never known passive congestions of the brain, convulsions, chronic hydrocephalus, chorea sancti viti, tubercular diseases of the lungs, etc., to be unattended by a feeble endowment of the organs above named. But it is proper to remark, that there is one exception to this doctrine as it now stands. When the hemispheres, or that portion of the cere-

brum which includes the peculiarly human faculties, preponderates over the balance of it, then it follows that the vital forces may be very feeble, and yet indicate no tubercular disposition, because, under such circumstances, the venous system preponderates over the arterial—a condition which has been discovered to be incompatible with tuberculosis. This condition of the cerebral system will be treated of, in a future page, under the name of “Encephalic Temperament.”

It appears then, that the cerebellum is indirectly connected with all the morbid affections which we have named, and, perhaps with many others. Animal sensibility presides over the cutaneous surface, and derangement in it may be followed by abnormal actions in the functions of the urinary apparatus, and to these may succeed, as sequents, rheumatism, gout, epilepsy, palsy, and other diseases among those before named.

When the organ of Muscular Motion is but feebly developed, then we have passive congestions of the brain, convulsions, hydrocephalus, and consumption. When largely developed, with deficient exercise, we have pulmonary congestion and hemorrhage, or cerebral apoplexy, or gout. And when over exercised, the kidneys may fail to eliminate the urea that is elaborated in the metamorphosis of the muscular tissue, and then rheumatism, epilepsy, or some other disease may result.

And attending a high endowment of Amativeness, under a deficiency of the other two organs of the cerebellum, amaurosis, paralysis and imbecility; and with a high endowment of the other two, and a deficiency of the posterior lobes of the cerebellum, to furnish motives for such exertions as would expend cerebellar irritation, we have cerebellar apoplexy and mania.

There is yet another physical condition connected with a relation that is sometimes found to exist between the cerebellum and medulla oblongata. When the latter organ preponderates over the former, there exists a liability to tuberculosis; and when this condition is reversed, there exists an idiopathic disposition to fat, or obesity and dropsy. In these cases the thorax is large enough, but the lungs have but little expansive power—persons thus constituted are said to be short-winded. They never manifest in the facial muscles any respiratory action.

If our premises be correct, it will be perceived that all the diseases we have named originate in parts which are exclusively appropriated to the functions of animal vitality; and when we shall conclude the consideration of the temperaments, it will be understood how they may so modify the influence of predisposing and exciting causes, as to produce many, and apparently very different, diseases.

If we shall be asked for the source of the diseases of the vegetative system, we can only answer that we do not know; but very strongly suspect that it is in the ganglionic system, and connected, by a telegraphic arrangement, with the anterior extremities of the middle lobes of the cerebrum.

Thus far, we have introduced no evidence in support of our conclusions, but it is not yet too late.

As to the independence of the cerebellar functions, as we have stated, we shall offer no proof in this place, but will simply ask to have it admitted that the cerebellum does perform a function; and then, after assuming it to have been clearly shown by physiologists that the medulla oblongata expends its force directly upon the respiratory function, we beg leave to refer our readers to the following table while attending to the explanations we are about to make—assuming as true that the size of the occipital foramen indicates the size of the medulla oblongata.

In the first class will be found those who have large chests and thoroughly developed animal muscles—those in whom respiration and circulation are greatly promoted by muscular action—those in whom the cervical, thoracic, and abdominal muscles aid the diaphragm in securing the full accomplishment of the respiratory function—those in whom, accordingly, we find a high development of both the medulla oblongata and cerebellum. Such a coincidence, as is here presented, and, as we believe, uniformly obtains, cannot be regarded as one of accident, nor as one of no import.

Nixon Curry, the first on the list, is the only one in his class who could be, even remotely, suspected to possess a liability to phthisis—his vital forces are not large enough, considering the magnitude of his medulla oblongata—he was a large and muscular man, without lymph or obesity.

Now, compare the first class with the third: In this the

medulla oblongata is equal to that of the first; but mark how inferior is the cerebellum; and mark too, the relation of this inferiority to the existence of consumption! We infer from the feebleness of the animal muscles of this class, that respiration is mainly sustained by the diaphragm, and, consequently, the superior portions of the lungs are but rarely inflated, and becoming feeble from inactivity, they become the seats of tubercles—for we believe that it is now admitted that tubercles first invade the superior portions of the lungs.

It is a very general opinion that tubercular consumption is of hereditary origin, perhaps in all cases, but this is not our conviction; while we admit that it is hereditary to a great extent, we contend that certain violations of the procreative laws result in that state or condition of cerebellar development, that disposes to pulmonary tubercle, and the most frequent variety of this violation consists in the marriage of individuals who are too nearly of the same temperament. And we as much believe that a perseverance in dancing, fencing, and public speaking, with a constant change of air, diet, climate, and society will remove the predisposition from those who have inherited it.

In the second class of subjects, exhibited by our table, it will be seen that the cerebellum is sufficiently developed, but that the medulla oblongata is deficient; and the consequence is a disposition to adipose deposition—a mode of decarbonizing the blood that predisposes to dropsical affections of the vegetative system, and possibly of both systems; because, in this constitution, we have seen œdema of the inferior extremities, hydrothorax, and ascites.

We may not be able to give the rationale of the conditions above unfolded to the production of the diseases to which they give origin, but we flatter ourselves that we have produced a permanent foundation for the future observation of others.

In the fourth division, there are but two cases, and they were introduced for the purpose of a few remarks. Kennedy had altogether a consumptive organization, and when hung may have had tubercles in his lungs. His organ of Amativeness is not larger than that of the Osage and Kaskian Indians, but the difference between the development of the organs of motion and sensation, respectively, explains, or rather confirms

the rationale previously given with reference to the propensity of the former.

Davis was more than eighty years of age, and when in the prime of life, was six feet seven inches high and very muscular. For some time before his death, which happened by a mechanical accident, he was much troubled with a cough, and would probably have died of phthisis. As he advanced in age, it would seem that his cerebellum decreased in size, which enables us to understand why it is, as Dr. Wood remarks, that men over sixty years of age are not the proper subjects for rheumatism.

In the case of the eunuch, we have put the organ of Amativeness down as absent, and so it appears by external measurement, but internally it existed, but was not more than an eighth of an inch thick. His skull presents an unusually extensive hypertrophy of the social and reflecting regions, produced, no doubt, indirectly, by the feebleness of his vital forces.

	1	2	3	4	5	6
FIRST CLASS.						
1. Nixon Curry, alias John Hill.....	31	13	11	7	8	5
2. Piper.....	32	12	11	6	7	8
3. Loper.....	33	12	11.1	6	7	7
4. Osage Indian.....	35	12	10	8	9	8
5. Kaskian Indian.....	36	12	10	8	8	7
6. Negro man.....	34	13	11	5	8	7
SECOND CLASS.						
7. A patricide, who died of dropsy.....	32	9.1	9	6	4	5
8. Choctaw Indian do.....	30	10	7.1	5	6	7
9. Creek Indian chief.....	33	10	8	5	4.1	5
10. Polish officer.....	32	9.1	9	8	7	5
11. Spanish pirate.....	29	10.1	9	7	6	4
12. Natural eunuch.....	28	9	8	0	3	3
THIRD CLASS.						
13. Fegan, died of consumption.....	28	11.1	10	4	3	3
14. Negro, do.....	33	11.1	9	4	5	4
15. Dubois, do.....	29	11.1	11	4	3	3
16. A Preacher, do.....	30	11.1	11.1	5	5	4
17. A German, do.....	32	12	10	4	6	3
18. Dr. L——, do.....	31	12	10	6	4	3
FOURTH CLASS.						
19. Kennedy, hung for rape.....	30	11.1	9	8	4	3
20. Davis.....	27	13	11	2	3	2

The above measurements or numbers represent eighths of an inch, and the fractions a sixteenth. In the first column is placed the space between the mastoid processes; the second,

the longitudinal diameter of the occipital foramen ; the third, the transverse diameter ; the fourth, fifth, and sixth, the vertical depth of the cerebellum at the center of the external surface of Amativeness, Muscular Motion and Animal Sensibility. The measurements being made upon the external surface of the cranium, cannot be absolutely correct ; but, as all of them are upon an equality, in this respect, the accuracy is sufficient to develop the inferences we have drawn from them. The crania belong to our cabinet, and in each instance we either knew the subject or had correct information of him.

It will be perceived, by a proper attention to the preceding facts, that a special liability to many diseases, if not to all, is founded in a want of a proper balance, or equilibrium, in the organization of the brain ; and this is indicated, and indeed demonstrated, by an inequilibrium of its various portions ; and, therefore, it is impossible that life can be prolonged, to any considerable extent, by medication ; more particularly in those diseases that involve the respiratory and circulatory functions.

We have incidentally expressed the opinion that the cerebellum performs other functions than those which we have, with a certainty ascribed to it, and these are mere desires—appetites—and the reason why we have supposed it to perform other functions, is its varying modes of development. In some, its greatest development is immediately around the foramen magnum—in others, it extends scarcely more than half the distance backwardly of the occipital foramen, that obtains in other instances. These differences have caused us to suspect that the organs of some executive functions may inhere in it. But without a discovery of these supposed organs and functions, the measurements we have made, with the conditions that were associated with them, authorize some interesting conclusions, beside those we have presented.

It is well known, that persons like those of the first class, are the most liable to inflammatory affections, and that it is far more easy to augment their vital manifestations than to reduce them ; while those who are constituted like those of the third class, are but little liable to highly inflammatory diseases, and that the vital manifestations are easily reduced, but are again elevated with great difficulty ; and hence the danger

of antiphlogistic treatment in febrile and inflammatory affections of this class. So true is this, that we have discovered, and others have reported to us the same, that a phlogistic course is the best from the very start.

There are yet to be developed other interesting relations of the cerebellum. In youth, when the cares and responsibilities of life exert but a trifling influence, the tax levied by the cerebrum upon the vital resources is remarkably slight; and hence the cerebellum is adequate to the demands of physical repair and development. As age advances and responsibilities increase, the cerebellum increases, so that at life's meridian, which, from the feebleness of the cerebellum in some individuals, happens at an early period of their history, we have as much of an equilibrium between the size of this viscus and the demands that are made upon it, as will ever obtain—in other words, we have an equilibrium between the vital and the chemical forces, and with the succeeding decrease of the cerebellum, there is a corresponding increase of the chemical forces and decrease of the vital. The facts we have got and have presented, render these relations as demonstrable as any proposition in Euclid.

In those who correspond with the third class, the vital and chemical forces are too nearly balanced to admit, even in fevers and inflammations, of any reduction of the former. We deny that either class have too much vital force, even when inflammation or fever is present, and those who think that inflammatory manifestations indicate an antiphlogistic treatment, have frequently found their patients of the third class unable to rally, even after a moderate depletion, the pulse in the outset indicating a very contrary condition.

The preceding facts and illustrations seem to authorize the conclusion that other faculties than mere desires inhere in the cerebellum—that a high endowment of it imparts a corresponding vital capacity to all the parts below—directly to the animal and indirectly to the vegetative—that it antagonizes the chemical agencies—those which are exerting a constant war upon the fundamental principles of life.

Every practitioner who has been, only to a small extent, a pathological observer, must realize the truth of the preceding discriminations; and if he will reflect, he will perceive that

the conditions cannot be otherwise than we have reported them. He knows that a destruction or a paralysis of the sensitive and motor nerves of the whole body, below the head, would deprive him of all chance to restore the patient; consequently, in proportion to their feebleness must be the slightness of the impressions that can be therapeutically made. In keeping with these views, is the uniformly tardy convalescence of all patients who are constituted like those of the third class. Let it be further observed, that the truth of these conclusions does not depend upon the soundness of our views as to the functions of the cerebellum, but upon the figures we have presented. Whatever may be the views entertained by any one upon the special functions of this portion of the encephalon, it is now demonstrable that the extent and modes of its development, hold certain relations to health, vigor, and longevity.

Our hopes, then, should be, for the future, founded upon a physiological prophylaxis. We must commence in infancy, and, by a proper physical education, restore the organization to such an equilibrium as shall be compatible with life, health and longevity. In every age of the world, human observation forced upon the thinking portion of society the indispensable necessity of physical education; but it was appreciated more by the ancients than it now is by existing society, and hence they gave more attention to it; and so it is with our existing savage tribes; and we do not believe that the two hundred savage crania, in our cabinet, furnish a single specimen marked like those of the preceding third class.

As much as we have been among many of our savage tribes, we never saw a case of phthisis pulmonalis; and, in harmony with this fact, we find their cerebelli largely developed, and their cerebral hemispheres peculiarly feeble or undeveloped. Sedentary habits, or extreme old age (which are adequate in their condition to the reduction of the cerebellum) could alone produce in them this disease.

The moral, social, sustaining, diplomatic, and reflecting faculties, and their corresponding organs in the cerebral hemispheres, are peculiarly human; and while their support and development depend upon the vital and vegetative forces, their activity and power are antagonistic to the former—ever tending to reduce and to break them down.

If, now, we will contemplate the neglect of gymnastic exercises, by those children whose parents intend them for scholastic honors, and the ever excited and restless condition of American society, particularly that of our cities—equaled in this respect by the people of no other portion of the earth, we can certainly have no difficulty in comprehending how that condition of the cerebellum is produced, which is ever associated with phthisis pulmonalis, and why it is that this disease is so frequent in our country.

The differences that exist between the first and third classes, in the preceding table, and their associated consequences, should dictate a complete revolution in the education of those whose cerebellum is comparatively feeble, or whose cerebral hemispheres are particularly large. The public mind must become penetrated with the conviction that a continuance of life depends upon an adequate endowment of the vital and vegetative systems—that a large and finely endowed cerebrum is of no consequence, without a cerebellum that can impart to it, and maintain in it, a vigorous, and, therefore, a useful action.

Hitherto, exercise, in the abstract, has been contended for, and particular kinds have been empirically recommended, for given purposes; but the developments we have made, will enable every physician to decide upon the precise variety that may be required. In the second Book, this subject will claim our particular attention.

PART II.

THE HUMAN TEMPERAMENTS.

CHAPTER I.

A REVIEW OF THE PREVAILING OPINIONS ON THIS SUBJECT.

THE constitutional diversities that exist, even in a single race of the species, have, no doubt, engaged the attention of the observing and reflecting from a period far more remote than the earliest recorded history. Sure we are, that attempts were made to classify them, as early as the time of Hippocrates; and, strange to tell, so far as regards description, little advancement has since been made.

In every age of medical history, and by every school of medicine, the subject has been regarded so important as to command the attention of the most talented and distinguished physicians and physiologists; and yet, in this great length of time, and by this immense amount of labor, almost the whole of the advancement consists in the single discovery, that the ancients committed an error in attributing the melancholic to the supposed secretions of the atrabiliary capsules and spleen.

But the detection of this error was followed by the perpetration of another of equal magnitude—that of attributing this constitution—a supposed physiological state—to a deranged or pathological condition of the bilious.

The moderns have committed another error, of no less magnitude, in founding what they have been pleased to denominate the nervous temperament on a pathological state of the

nervous system. This temperament, says Professor Dunglison, like the melancholic, is "seldom natural or primitive." It is morbid, or secondary, being induced by sedentary life, sexual indulgence, or morbid excitement of the imagination from any cause. To found a physiological condition of the system upon a pathological one, appears to be a gross violation of all sound philosophy.

We define Temperament to be a mode of animal being, *sui generis*, compatible with life, health, and longevity. This definition agrees with Professor Dunglison's in every essential point; and with it the ancients were consistent; they founded the melancholic constitution upon two supposed physiological facts; but the moderns have been anti-philosophical enough to found two physiological states upon two pathological ones—and that, too, in violation of their own definition; for it cannot be concluded that life, health, and longevity are compatible with pathological conditions of the system.

The classification and doctrines usually adopted are those of Richerand; consequently, before attempting to advance anything new, it will be proper briefly to review them, and even some others which are not without advocates. But, before proceeding to the discharge of this duty, it may be well to observe, that no one will doubt that it is conformable to natural law, to infer that where there is an equal number of similar organic parts, there may be induced an equal number of similar organic changes. Negroes, Indians, Malays, and Mongolians, have as many, and similar, organic parts as the white race; and, consequently, are liable to the same peculiar organic changes. It may, therefore, be physiologically supposed that the same constitutional peculiarities that distinguish the white, may also distinguish the other races. In making the proposed reviews, it will be necessary to bear these remarks in remembrance. In the examination of this subject, we shall quote from Professor Dunglison's *Physiology*, which presents as correct an account of what is known upon it, as any work with which the profession is acquainted.

The *Sanguine Temperament* is characterized by a "ruddy complexion, animated countenance, firm flesh, light hair, fair skin, blue eyes, quick conception, ready memory, lively imagination," etc. The further account given of it by various

writers, amounts to about this: The sanguine man is only fit to love; to feed; to indulge in every species of sensuality; to be a friend in prosperity, and a coward in adversity. Such unqualified generalizations are unworthy of philosophers. When it shall be known that two of the most distinguished of the human race were sanguine men, this class of the species, at least, will know how much physiological opinions are generally worth.

Have not some Negroes, Indians, Malays, and Mongolians firm flesh, quick conception, ready memory, and a lively imagination? And yet, none of them have a ruddy complexion, light hair, and fair skin. How, then, shall we know a sanguine man of the universally dark-skinned races? If there is any truth in the doctrine of the temperaments, it should have as discriminating an application to the colored races of the species as to the white.

In the description of the *Bilious Temperament*, there is not a single circumstance named which does not occur in other temperaments, except the brown color of the skin and the dark hair; and these peculiarities are common to all Indians, Malays, and Mongolians. And yet, all the individuals of these races are not of the bilious constitution.

It is a remarkable circumstance, that physiologists, almost without exception, have classed all the great men of the world under this head; and, as strange as it may appear, in doing so, they have violated their own definitions. Under this head they have classed Peter the Great, Cromwell, Julius Cæsar, and Napoleon; and General Washington, too, and probably by this time General Jackson and General Scott are placed in the same category.

How can physiologists venture upon such violations of all scientific discrimination, for the shallow and unworthy purpose of supporting a mere hypothesis? Bonaparte, Cromwell, and Julius Cæsar had bluish gray eyes; Bonaparte and Peter the Great did not possess the firm muscle and sharp outline of the bilious man; and Washington had light hair and blue eyes. Hence, it appears, that there have been some great men who were not of the bilious temperament.

In the *Melancholic Temperament*, we are informed that "the skin assumes a deeper hue than in the bilious; the

countenance is sallow and sad ; the bowels are torpid, and all the excretions are tardy ; the pulse is hard and habitually contracted ; the imagination is gloomy, and the temper suspicious." As we are not informed of the precise depth of "hue" in the color of the bilious man, we cannot judge, with any accuracy, as to the complexion of this temperament ; it may be presumed, however, to be about that of our Indian tribes. The balance of the description applies with much accuracy to a bilious man laboring under a chronic disease of the liver.

This temperament, furthermore, is founded upon no anatomical or physiological condition of the system. From all that has been said about it, by modern physiologists, it must be regarded as a pathological condition of the portal system ; and yet they have treated it as a physiological or normal one.

In the *Lymphatic Temperament*, "we find soft flesh ; pale skin ; fair hair ; weak, slow, and soft pulse," etc. It is probable that any observer might distinguish a lymphatic negro from any other, by his soft flesh and shapeless body ; nevertheless it is not true that a lymphatic negro, Indian, or Malay has a "pale skin and fair hair."

Great importance has ever been attached to a knowledge of the temperaments in the practice of Medicine ; and yet the knowledge of them that has been acquired, has proved to be scarcely of any avail. The primitive temperaments are but rarely met with, and what is generally known of them, even by the ablest physiologists, is so inconsiderable as to render the combinations unintelligible, and, of course, the whole subject unimportant in practice.

Phrenologists are as much in the dark on this subject as are the physicians ; they are compelled to be informed of the temperament of an individual before they can venture an opinion upon his character, from his skull or bust.

Inasmuch as the Edinburgh "*Phrenological Journal and Miscellany*," and the American "*Annals of Phrenology*," have highly complimented the views, on this subject, of F. Thomas, D. M. P., of Paris, it may not be uninteresting, nor without utility to review them briefly.

In his classification there are three primitive or elementary temperaments—the encephalic, thoracic, and abdominal—and,

by the combination of these, he produces four others—the mixed, encephalo-thoracic, encephalo-abdominal, and the thoracico-abdominal: making in all, seven.

It cannot be discovered that this system is more practically useful than the other. It has, however, the merit of being equally applicable to all races, and in being founded upon real anatomical conditions. But his treatment of the subject shows that with him, it is a mere theory—more plausible than useful—that it is not the result of extensive observation and generalization.

A single illustration will show that his system can be of no use in the practice of medicine. A walk of twenty minutes in any one of our cities will discover men who possess his abdominal temperament; but in one will be found an active and extensive portal system, while in another it is too unimportant, comparatively, to deserve notice. The pathological conditions of these two are so widely different in any one type of disease, as to require very different, almost opposite—therapeutic agents. This single illustration is enough to destroy his system in the estimation of a discriminating physician.

He says, that when the brain and lungs are small, and the abdominal viscera are largely developed, we have the lymphatic constitution. He seems not to have known that lymph, in a normal condition of the body, never pervades one part of the system to the exclusion of any other. A lymphatic man, with, relatively, a small head, has never been seen. A man may be fat and have a small head, because the brain secretes no fat. The magnitude of this error is sufficient to place under the ban of suspicion every opinion he has advanced upon the subject. If his statement were true, all lymphatic men would be idiots; but, fortunately, the truth is that some of them are distinguished for their mental abilities.

He further states, that when the brain and abdomen are small, and the lungs and heart are large, the individual is sanguine. We are confident that this is a condition which he never saw. Can vigorous respiration and circulation be maintained without a vigorous abdominal apparatus? The brain may be relatively small because of its superior density, which makes ample compensation.

His encephalic and his encephalo-thoracic temperaments

are most certainly and *demonstrably* one and the same; in the first, he includes the entire encephalon—the cerebrum and cerebellum. Now, it so happens that the cerebrum may be exceedingly large, while the cerebellum may be as remarkably small; and with a small cerebellum, there is a small chest; with a large cerebellum, a large chest—and an exception to this relation between the cerebellum and chest cannot be found in any department of creation. The existence then, of a large cerebellum, implies that of a large chest. We trust that we have made this matter unanswerably clear in our expositions of the functions of the cerebellum.

Again, he teaches that when the thoracic and abdominal viscera are small and the brain large, the individual possesses great mental energy. It may be concluded then, that if the little he has of abdominal and thoracic viscera were converted into brain, he would possess still more mental energy.(?) The truth is, that it would be just as philosophical to speak of a large steam engine having or manifesting great power without steam. How is it possible for the brain to manifest great power without vigorous nutrition, respiration, and circulation? Can a Bonaparte, a Cromwell, a Scott, or a Washington be found with small thoracic and abdominal viscera?

It is useless to pursue the views of Mr. Thomas any further, except to remark that they are not more inservient to the wants of phrenology than they are to those of medical practice. The phrenologist, when examining a skull, or when comparing certain parts of one with those of another, cannot have before him the chest and abdomen which were, at one time, associated, respectively, with the heads. The ethnologist, in the investigation of national character, from crania, cannot have before him the national chests and abdomens.

We are not surprised that Mr. Thomas conceived this theory of the temperaments, nor that he placed it before the public; but we are truly surprised that the Scotch and Boston phrenologists should have so highly eulogized it as they have. His, like many others, is a useless theory—plausible until put to the test of extensive observation and rigid comparison.

CHAPTER III.

OF THE ELEMENTARY TEMPERAMENTS.

INTRODUCTORY REMARKS.

It is generally agreed that very important changes take place in the temperament of individuals; but to this opinion we can only give a very partial assent. We have never known a sanguine man to become bilious; nor a bilious one to become sanguine or lymphatic. We have seen no very important change to take place in any one of the temperaments. The black or red-headed child will show a black or red-headed man. Those persons who possess only moderate powers of assimilation, if mentally constituted to be indifferent to care and responsibility, will become obese; and it is for this reason that children and all of the inferior animals may become fat. Lymph is a very different matter; so different that it is not true, as it has usually been represented, that children are generally lymphatic. Lymph prevails in the brain, in common with all other parts of the body; but this is not the case with fat—it never obtains normally, in the brain. Obesity may occur in several of the temperaments, possibly in all of them, if the mental constitution be favorable to ease and repose. Many, and probably all, normally lymphatic persons, were lean either in youth and early manhood, or during the period of muscular activity, growth, and development; but their heads always indicate their lymphatic constitution; and if they had not become lymphatic they would have become unhealthy and nervous. It sometimes happens, from close application to study, and perhaps other causes, that they do not acquire lymph, and thus the supposed nervous temperament of some authors, originated, we have no doubt, in many instances.

All the temperaments can be modified by the influence of circumstances; but not to such an extent as to change one into another. The sanguine and the bilious, by early habits of confinement and study, may become more encephalic, or by active and highly responsible positions, they may become, to a

small extent, a quadruple, as in the case of Gen. Washington. But a sanguine man never becomes sanguine-bilious, nor do any of them ever pass into the equally mixed binary combination; either element, however, can be strengthened or weakened.

Wealth may produce, as it frequently does, ease and luxury, and when it happens with those who are not ambitious—who are well endowed with hope and the vital forces—they pass into what some call the abdominal temperament. This condition obtains very frequently in old and wealthy communities; but in new and poor ones, it is but rarely met with.

Physiologists have attributed every degree of talent, and every peculiarity of character to the temperaments; while the phrenologists have gone to the other extreme. The former were ignorant of the true cause of mental peculiarities, and the latter have yet to learn the range of constitutional influence. It is a little surprising that phrenologists have not discovered that although no single affective or intellectual peculiarity can be assigned, as a distinguishing feature of any one temperament, yet each of them is distinguished from the others by a *sui generis* outline of cerebral development, such as gives to each a marked outline of character.

Phrenologists have supposed that the temperaments indicated only to some extent the quality of the brain, but not in anywise its configuration or general functions. If they had taken the trouble to compare the heads of the bilious with those of the lymphatic, they would have discovered their mistake. Professor Caldwell, who has been laboring in the science some thirty years, and in physiology nearly all his life, was sufficiently unacquainted with the subject, as to suppose that we were guided in our discriminations, by the texture of the bone, or some other condition of it, not less insignificant.*

Various physiologists have adopted different names for the temperaments; but this is a matter of but little moment, provided we understand and properly define them. The classification with which we have been content, is that of the ancients, with but one exception. We divide them into the sanguine, the bilious, the lymphatic, and the encephalic (which

* American Phrenological Journal.

we believe to be identical with the melancholic of the ancients; at all events it agrees with the one of this name in Lavater's works); and their combinations, making in all fifteen.

The outlines and peculiarities of the several combinations are more easily perceived, by one of our practice, than described. Nevertheless, they soon become obvious to an industrious observer. By the use of crania and crayon portraits, we have found many students who succeeded, by one course of lectures, in distinguishing the temperaments and their combinations in both living subjects and crania. A few soon learn to do it even by chirographic marks. It must be confessed, however, that much difficulty attends some portions of the subject, without the aid of a practical teacher. As complexion of skin, eyes, and hair, in the white race, will greatly aid in distinguishing the temperaments, students, who have not the advantage of a practical teacher, should study the subject thoroughly in this race, before attempting any application of the science to crania and the colored races.

With these general remarks, we proceed to the consideration of the subject in detail. Our descriptions of complexion, etc., will have reference alone to the white race, and those of crania will apply to all races.

It should be further remarked of this, as of other departments of natural history, that no description that can be given of a species, will appear applicable to all the varieties, in the judgment of an unpracticed observer. Apparently strong exceptions to the descriptions we shall give, will be found in each division; but a close investigation will discover that the apparent exceptions consist in a departure from the rule, of only some of the features—enough of them preserving their integrity to determine the species to which it belongs. An unpracticed observer, in looking at the shells that may cover a table, will discover a striking resemblance between individuals of different species, and striking differences between others of the same species—he knows not how to make the first move toward a classification of them; but a conchologist will, in a few minutes, dispose of a majority of them—a few of them may give him some trouble. It is precisely so with the human temperaments. Hence, Professor Caldwell is not the only well informed medical scholar who has manifested an obstinate

incredulity when first told that we could determine the temperament and complexion by an examination of the naked skull; and this incredulity and obstinacy increased, when informed that we could do the same with equal facility, by chi-rographic marks. But no naturalist should be astonished or incredulous upon receiving such information; and no philosopher should venture to oppose and denounce such a pretension, before he finds it to be in contravention to some known and established law.



(GENERAL WASHINGTON.)

I. SANGUINE TEMPERAMENT.

Our conception of this constitution is precisely analogous to the mixed temperament of Dr. F. Thomas, and to the tonic one of Dr. Darwin, and our observations have induced us to believe that it is the primitive constitution — that it is the only one that can be regarded as perfectly normal. The strongest reason we have for this opinion, consists in this fact—we have, in no instance, discovered any indications of degeneracy to result from parents, wherein both of them were of this

constitution. In another place we shall have more to say upon this subject.

The picture of the Apollo Belvidere, as drawn by Dr. Thomas, is so applicable to the best or most finished specimens of this constitution, that we cannot refrain from placing it before our readers.

He says, "not only do none of the three cavities preponderate, but there is a just proportion in the limbs as compared with the rest of the body and with each other; and the bones, muscles, bloodvessels, nerves, cellular tissue, and all the secondary parts, are also in beautiful proportion. This *chef-d'œuvre* of art represents man in his most perfect type; there is nothing too strong and nothing too weak; nothing in excess and nothing deficient. Phidias, inspired, has created something celestial!—that brain cannot be the seat of too violent or too impetuous passions, although it can experience them all. The intellectual faculties, sufficiently developed, do not hurry him on to the vagueness of hypothesis and conjecture: his blood is neither too fibrinous nor too much animalized; his abdominal functions are performed with facility; the chyle is separated and absorbed in sufficient quantity for the nutrition of his beautiful body; the limbs have all that is required for exercising with the greatest facility all the movements necessary to the whole; and the physiognomy represents, in all its features, a perfect equality of the whole body."

This description is not, probably, more applicable to the production of the artist, than it would have been to General Washington and General Scott, in the prime of their lives, or to Tuskena, a sub-chief in the Creek Indian nation, who was the most beautifully proportioned man we ever saw.

The language which the Marquis of Chastellux has used with reference to the Antique Apollo and General Washington, may be applied to this division of the human race, as a whole. He says that if you are "presented with medals of Cæsar, of Trajan, or Alexander, on examining their features, you will still be led to ask what was their stature, and the form of their persons; but if you discover, in a heap of ruins, the head or the limb of an Antique Apollo, be not curious about the parts, but rest assured that they were all conformable to those of a god. Let not this comparison be attributed to en-

thusiasm ! It is not my intention to exaggerate, I wish only to express the impression that General Washington has left on my mind ; the idea of a perfect whole,* brave without temerity, laborious without ambition, generous without prodigality, noble without pride, virtuous without severity."

In fine, the sanguine constitution is just the one for the primeval or Adamic age of the world, in which the only book was nature, and the only duties were those which we owe to our God, our families, and our neighbors—an age in which there were no crowns to covet, nor empires to conquer. It is a constitution in the highest degree compatible with life, health, and happiness ; and a source of pure vitality for the population and replenishment of the world.

Fickleness and inconstancy have long been charged as characteristics of this constitution. Lavater almost hated every one who possessed a blue eye, and Mr. Cook says, that persons of this temperament are light and inconstant, fitted rather for the companionship of the hour than for the vicissitudes and trials of mortal destiny. "In the gay days of hilarity and prosperity, the sanguine man or woman basks beneath the sunny beam, lively, joyful, and extravagant ; but you must not be surprised if you look in vain for this character in the hour of darkness and adversity ; or if it should grow pale at the prospect, when summoned by duty or affection, to walk by your side through the valley of the shadow of death. This is not the temperament of the martyr or hero." Similar opinions, though not expressed in so many words, are advanced by Broussais, Richerand, Good, and others.

These traits of character are frequently to be found in all of the temperaments, but the exceedingly elastic character of this one, may render it more vulnerable to the charge. The perfect adaptation and equality of strength which marks it, and the purity of the blood that stimulates all its organs into

* Abating a little of his obesity, incidental to his age, we were similarly impressed with the person of General Scott. He is six feet four inches high, and yet, when seen alone, he does not appear to be above a good average size ; and this is because of the fine proportion of all his parts. We once saw a young lady of this temperament, who was six feet two inches high, and who, when seen alone, attracted no attention, on account of her size, but when seen with other ladies, she appeared as a giantess. There was no want of symmetry in any part of her person.

action, show that its equilibrium must be easily disturbed by any cause, however inconsiderable; and for this reason, it is evident, that as soon as the disturbing cause is removed, the equilibrium would be restored. This is positively the condition of the sanguine constitution; hence it follows that it continues to act during the existence of the motive which produced the action. This is the reason why the sanguine man is never absent-minded or abstracted, but is at all times present to all that surrounds him. It matters nothing whether this peculiarity be attributed to the shortness of the posterior lobes of the brain, or to the influence of temperament, because the one always attends the other in this constitution.

That peculiarity of this constitution which has so disgusted some physiologists, has had the effect to save the whole class from lunacy and suicide. The internal motives with which it is endowed, are usually too feeble and evanescent, to impel them forward after crowns and conquests; but, when engaged in such enterprises, as instruments, there are very few, if any, who prove to be more safe or useful.

Physiologists define this constitution to consist in a preponderating activity, influence or development of the sanguiferous system. Such a state of it would be pathological, or at least incompatible with health and longevity. It has been admitted that there pervades the whole of it, a perfect adjustment of all its organs and tissues, and therefore, to speak of a preponderating influence, is to admit imperfection and a tendency to disease. The great peculiarity of this constitution appears to consist in the purity of the blood, its thorough distribution and adaptation of all the tissues to its impression.

This constitution may be usually known by its light hair, blue eyes (not a sky blue, but a mixture of blue and white, or a blue ground with white specks), fair skin, nose usually large and frequently convex on the bridge, lips well defined, having the superior one the more prominent; the limbs and all parts of the body being round, well turned, and more adapted to strong, dignified, and graceful movements, than such as are remarkable for activity or suppleness.

In consequence of very large perceptive or small reflective powers, the forehead recedes; the cerebellar portion of the occipital bone, between the mastoid processes, is full and large,

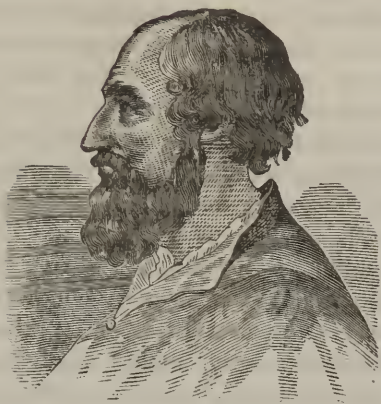
particularly the lateral portions; the posterior lobes of the cerebrum are short, when compared with those of the bilious; the vertex is, relatively, more elevated; the corona is not fully expanded; the superciliary ridge is well defined and the glabella is prominent and rough; the head rests more vertically upon the cervical column, than in the bilious, the only one with which it can be confounded.

Sanguine people readily know or perceive the things and the relations that exist within the sphere of their pursuits and the results that may grow out of them, without the toil of ratiocination. They appear never to reason, and yet their judgment, for soundness, will favorably compare with the best that the race produces. They are not adapted to the inductive sciences, or to sedentary and studious pursuits, but to the active. They are admirably constituted for horticulture, agriculture, the mechanic arts, and the descriptive sciences. Affectively, they are better adapted to occasions that require fortitude and submission, than any other class—they make the best subjects and the best servants, and notwithstanding other physiologists to the contrary, there is none more brave, and certainly none less revengeful. They are furthermore, well constituted to enjoy all the amenities of life, and, as a consequence, they frequently become fat, but they very rarely indulge to intemperance, and still less frequently to brutal excesses.

When we contemplate the strong and muscular character of this constitution, we should be entirely unable to assign a reason for the fact, that not a single specimen of it is to be found in the English Boxiana, but for that discovery of its internal motives which we have explained.

The brain of the sanguine constitution is neither so dense nor active as that of the bilious or sanguine bilious. As illustrations of this constitution, General Washington,* General Scott, Lord Cornwallis, Petrarch, and Dr. Caspar Wistar may be cited.

* In Trumbull's portrait of Washington, the superior part of the forehead is rendered too prominent, and the inferior is not prominent enough. In this wise, the character is weakened rather than strengthened. These faults, as we conceive them to be, we have observed in no other representation of this extraordinary man.



(ARIOSTO.)

II. BILIOUS TEMPERAMENT.

Under this head, we have, in the white race, two varieties, which are, externally, exceedingly unlike, and yet they are intrinsically the same. The one has black hair, dark eyes, and brown skin; the other has red hair, bluish gray eyes, and a florid complexion. We regard these two varieties as being essentially the same, and for these reasons: 1st. Black-headed parents have occasionally red-headed children; 2d. The red-headed variety combines with the other constitutions just as the black does; 3d. The red and black do not combine with each other to the production of a cross; 4th. Their skulls resemble so closely as not to admit of a distinction; 5th. We cannot distinguish the one from the other by their chiromancy—the most delicate of all tests; 6th. Quinine and mercurials have the same effect upon both; and, 7th. Both possess the same special and general character. For these reasons we treat of both as being one and the same. As we have no facts to show conclusively why this difference should exist in the same species, we will not trouble our readers with any speculations on the subject; but we may add that we were engaged many years before the conclusion we have expressed was forced upon us. Physiologists have uniformly taught, that the more florid the complexion the more sanguine the constitution. At one time this was our own impression,

but close and continued observation, for twenty-five years, has relieved us of all doubt, as to the soundness of our conclusion. It may be possible that the red variety was originally produced in the north, and the dark in the south, or they may represent two distinct races.

In this constitution, every feature and every articulation throughout the system is attended with angularity and abruptness; the pulse betrays more activity and the subcutaneous veins more prominence than in the sanguine. The complexion is brown or florid, the hair is black or red, the muscles are more moderately developed than in the sanguine, but they are more dense or firm; the nose is rather large and frequently aquiline, but more frequently, in this country, perhaps, long, slender, and pointed, having the nares well developed and the alæ very thin; the lips are well defined, with the superior one, as in the sanguine, more prominent than the inferior; the forehead, as in the sanguine, recedes, and for the same reason; the posterior lobes of the brain are much developed backward and upward; the hemispheres are less elevated; the corona, as in the sanguine, are not expanded: the cerebellum is more contracted or less developed laterally and downwardly than in the sanguine, but developed more in a posteriorly direction, and the whole head is adjusted more obliquely upon the cervical column. The brain is not usually so large as in the sanguine, but is more dense and much more active. The perceptions, conclusions, and actions follow each other in such quick succession, as to be incomprehensible to other classes of men, and hence they are usually suspected of being rash and visionary.

Physiologists attribute this temperament to a preponderating influence of the liver and portal circle. This doctrine, to us, is objectionable, because it certainly implies a constituted liability to disease or derangement. As persons of this constitution are as healthy and live as long as those of the sanguine, we certainly have no evidence that the same law of adjustment or adaptation does not obtain as much in it as in the former constitution. The sanguiferous system in this, is about equal to that of the sanguine, except that the organs of its manifestation are smaller, but then, they are more dense and active, which amply compensate for their inferiority in

size. It manifests as much force as does the sanguine and considerably more energy; it is as easily impressed, but the impression lasts much longer and leads to a greater persistence of action.

Then what is the cause of the difference between them? In this: the posterior and superior posterior portions of the brain are considerably more developed, and thereby produce stronger motives to action. But did this cerebral development produce the difference, or did the latter produce the former? As a sanguine man is sometimes changed into a partially sanguine bilious one, by strong external agents, it may be concluded that the cerebral development and the constitutional difference between the two, were both produced simultaneously, and that when produced, they act reciprocally upon each other.

As the capacity of this constitution to retain impressions cannot be attributed alone to the cerebral developments above named, we are still called upon to inquire, what it depends upon? Our own impression is, that the portal system imparts to the blood qualities which have the power, by acting upon tissues constructed in harmony with them, to produce those phenomena, which, taken together, constitute the bilious temperament.

The bilious constitution is not so elastic as the sanguine—it does not cease to feel, and consequently to act, when the cause is removed; and hence the reason why it is so liable, as it is, to become morbid, even to insanity. The capacity of this temperament to produce great men, has been much overrated. In this respect it differs from the sanguine thus: the great men of the latter are those who discharged with able and distinguished faithfulness the obligations imposed upon them by their country or others in authority; and the great men of the former are those who were impelled to great achievements by a will or purpose of their own. The latter will never usurp the power intrusted to them; and the former will never surrender it without reluctance.

As illustrations of this temperament, physiologists have given Mahomet, Charles XII, Dante, Cortez, Pizarro, Charlemagne, Francis I, king of France, and Lady Huntington. They have cited many others whom we know are not bilious, and hence we exclude them.

This constitution is favorably adapted to the elementary sciences, particularly the descriptive, and to the active pursuits of life; but not to sedentary habits and philosophical investigations.

In consideration of the very active and muscular character of this constitution, we would, *a priori*, expect to find in it a proper proportion of professional pugilists, and, accordingly, the "Boxiana" gives us three, Fosbrook, Stevenson, and Cooper. The former two, though pretty good boxers, never acquired much fame. Cooper was a sturdy fellow, and possessed much good sense; but he was not a scientific boxer; he was, however, "a hard, slashing hitter and a long laster." His battle with O'Leary lasted sixty eight minutes, and ended in the death of the latter, though he was regarded as the best boxer. The decisive blow of Cooper is said to have been thrown out as the last paroxysm of a beaten man.



VAN-TA-GIN—A CHINESE GENTLEMAN OF DISTINCTION.

III. LYMPHATIC TEMPERAMENT.

In this constitution, says Professor Dunglison, "the proportion of the fluids is conceived to be too great for that of the solids; the secretory system appearing to be active, while the

absorbent system does not act so energetically as to prevent the cellular tissue from being filled with the humors."

For many years this view of the subject satisfied us, as it has no doubt everybody else; but now, we doubt whether the presence of the lymph is not a mere circumstance, which, though incidental, is not essential to the temperament—a mere effect and not the cause. Though the lymph is present, generally, perhaps, from childhood, yet it is frequently delayed to the twentieth or twenty-fifth year of age and sometimes to the end of a life extended to fourscore years.

Now, of what constitution are such individuals? They are neither the sanguine, the bilious, nor the encephalic. To a scientific observer they are just as distinguishable by the head and the features of the face as they are after the appearance of the lymph. In them, the sanguiferous and portal systems are much less developed than in the bilious; the hair is light, the nose is pugged, the eyes appear, in some measure, heavy, and are of a dirty blue color, the lips are tolerably thick and their cleft is straight, the forehead is rather square and perpendicular, the head, in figure, is quadrangular and not larger than is common to the dense temperaments, and the disposition is irritable and fidgety.

As an illustration of this unlymphatic peculiarity of what is denominated the lymphatic temperament, the Reverend Samuel Parr, L. L. D., may be adduced.

"Independently of his great acquirements and profound erudition, Dr. Parr possessed much of what is called character; that is to say, he was a man of originality of mind, and differed much from the common herd in his opinions and actions. Yet his peculiarities hardly amounted in any case to eccentricity; they were simply little marks, which caused him to be the observed of all observers—the outward and visible signs which indicated that genius which was more amply developed upon near and closer intercourse."

"Mr. Porson once remarked, that Dr. Parr would have been a great man, but for his trade, his wife, and his politics." The greatest "fault alleged against him was an infirmity of temper, though tried by early disappointment and difficulty, by pecuniary distress, and by domestic dissension. It is said that he married for a housekeeper, and that his wife married

for a home. Her dislike to him took every possible form of annoyance. She described herself as having been educated by three maiden aunts, in "rigidity and frigidity, while the doctor had been born in a whirlwind and bred in a storm."

The truth is, Dr. Parr did not possess a single element of greatness, all that he had was pugnacity and learning—he was only a bundle of little things, which his pugnacity converted into porcupine quills. He was, however, a good illustration of the dry form of this constitution.

When we have found the lymph present in early youth, it was associated with good health, and we do not know that we ever discovered good health without it. This want of health in youth may so impress the constitution, in many instances, as to prevent its accumulation in after life. This circumstance and the mental irritability, induce us to think it very probable that the presence of the lymph constitutes the normal state of this constitution.

That it depends upon some peculiarity of the cellular tissue there cannot, perhaps, be much doubt, and to us it seems to consist in part, or altogether, upon an incapacity in its capillary vessels to circulate the red portion of the blood. The skin has an opaque and dough-like appearance—one more indicative of death, than vitality. Mr. Combe says that the skin of this constitution is "clear." He has certainly confounded it with the sanguine lymphatic.

Upon the appearance of the lymph the head becomes globular and much larger, the eyelids, in a great measure, closed, the cheeks full and ponderous, the nose larger, the lips thicker and the hair longer, finer and thinner. As might be supposed, all the motions of the body are slow and clumsy. The large size and globular form of the head will readily distinguish this from the other constitutions.

Partly in consequence of the lymph, and of the well-balanced condition of the brain, but mainly for the want of that influence which a highly developed sanguiferous and portal system can impart, this constitution manifests but little energy or enterprise; nevertheless, in a safe and judicious common-sense, it is not more than equaled by either of the others.

We saw in Pennsylvania, a female, who was about seven-

teen years of age, so lymphatic that she could not walk, and yet she was rather handsome and very sprightly.

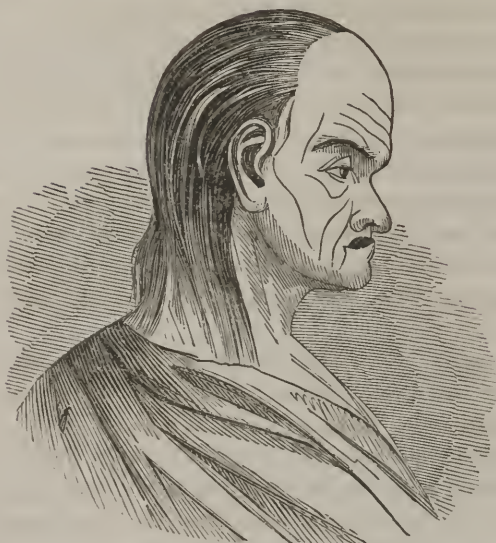
Many ladies and a few gentlemen are much troubled about their superabundance of lymph. If they will live on dry food, and drink but little fluid of any kind, they will soon reduce themselves to very comfortable dimensions.

Hogs raised on still-slop become exceedingly lymphatic and unfit for a gentleman's table. All lovers of good ham should regret that our old long-legged, long-nosed, sanguine, and bilious breeds of hogs should ever have been replaced by foreign lymphatic ones, which are fit for little else than lamp oil and soap.

"Pomponius Atticus, the friend of Cicero, is offered as an example of this temperament, in ancient times, and Charles IV of Spain, who resigned himself almost wholly into the hands of Godoy; Augustus, king of Saxony, who equally resigned himself into the hands of Napoleon, and Ferdinand, of Sicily, who surrendered for the time the government of his people to the British," are given as examples in modern times.

The above worthies may all have been lymphatic, but as physiologists have agreed, or apparently so, to regard all great men as bilious, so they may have agreed to consider all the passive ones as lymphatic. From the bust we have seen of Socrates, we look upon him as a fine specimen of this constitution; and although he never manifested much enterprise, yet the moral and intellectual excellence of his character is sufficient to redeem the whole class.

The illustrations which are usually given of this constitution, and, indeed, of the others, are caricatures—libels upon human nature. Van-ta-gin, the Chinese gentleman of distinction, whose portrait is here presented, gives as perfect an idea of this constitution as can be conceived of. In Colonel Washington (American Portrait Gallery), the lymph so preponderates over the sanguine and bilious elements of his constitution as to render him a pretty good specimen. Between him and Van-ta-gin there is a strong family resemblance, although they are of different races. In this constitution mercurials are inadmissible, because of the feeble influence of the portal system; and quinine only in small portions.



(REV. DR. REINSTADT.)

IV. ENCEPHALIC TEMPERAMENT.

This temperament was suggested to us, after a close observation of five years, in search of the anatomical foundation of the fourth or melancholic constitution, by seeing a boy, who was about sixteen years of age, in Professor Hall's college in the city of Baltimore. He was as much like Father Reinstadt (a native of Switzerland, a clergyman, recluse, and scholar, whose portrait Lavater introduced into his work on physiognomy, as an illustration of the melancholic temperament), as a boy can be like a father. He had a large and well-formed head, but his thorax, abdomen, cerebellum, muscles, and bones were all particularly small and feeble.

If the ancients had attributed the melancholic temperament to a great development of the cerebrum, particularly the hemispheres, when compared with other parts of the head, and the head with the general system, instead of the biliary capsules and spleen, they would have been correct.

When we saw this boy, we could discover no reason why a great endowment of the cerebrum was not as much entitled to

make its mark on the constitution, as that of any other apparatus. So far as we have read, and we have read everything on this subject that we have been able to find, we are the first to have conceived of such a temperament.

In the encephalic constitution of Dr. Thomas, the whole brain is referred to; his view of it, therefore, includes too much—it embraces parts which have but little or no relationship in function—the cerebellum is appropriated to the vital functions, and the cerebrum to the mental; with a high endowment of the former, we always find a corresponding one of the sanguiferous and muscular systems; and with the latter, only mental phenomena.

The nervous temperament, as hitherto understood, is described as having a small head and a great irritability of the nervous system. Professor Dunglison says, that the susceptibility of this constitution to excitement from external impressions, is unusually developed; and, like the melancholic, it is “seldom natural or primitive. Mr. Combe says, that “the whole nervous system, including the brain, is predominantly active” in this constitution, “and the mental manifestations are proportionally vivacious.”

In our review of the prevailing opinions upon this subject, we showed that the so called nervous temperament was confessedly founded in a pathological condition of the system; we will now add, that it exists essentially in a degeneracy of the vital forces of the sanguine encephalic, sanguine encephalobilious, and sanguine bilious constitutions; produced by sedentary habits, vitiated air, or excessive indulgence of the propensities. It is generally associated with a liability to pulmonary diseases. In fine, it obtains in an entailed preternatural activity of the nervous system and an imperfect and feeble development of the vital; producing, on the one hand, genius; and, on the other, infirm health and premature death. If these remarks are true, it requires no argument to prove that such a condition of the system is not a physiological one, and, therefore, cannot be compatible with life, health, and longevity.

The third class in Table, page 20, furnishes illustrations of the sanguine nervous and bilious nervous temperaments, according to modern physiologists.

Between these views of the nervous temperament, and ours of the encephalic, it will be found that there is no similarity. We taught our doctrine of the latter as early as the fall of 1832, in the city of Baltimore, and quite extensively through Virginia during 1833 and 1834, and, in Cincinnati and New Orleans, in 1835, and more or less ever since, in the south-west.

We claim to have discovered the anatomical source of that fourth element in human physiology, which the ancients and moderns have both recognized to exist, and which the former denominated the atrabilious or melancholic; and we have introduced the preceding circumstances as authenticating the period when we made the discovery and the notoriety which it has since obtained.

Professor Caldwell,* excellent authority in medical history, has said, that if we could determine the temperaments by the cranium, the discovery was our own, and, to do this, with the combinations, it is obvious that we must have discovered all the material conditions involved in the primitive ones. Notwithstanding all this, if any one will show that he taught these views, at a period earlier than we did, we will cheerfully abandon all claim to them.

This constitution may be known by its light, long, lank, and fine hair; dirty blue eyes; thin and rather small nose, inclining upward at the extremity; thin lips, having the inferior one the more prominent; pointed cheek bones, because of the great thinness of the facial muscles; the forehead being large and projecting; the large and somewhat quadrangular form of the head; the relative smallness of the cerebellum; the contracted thorax and abdomen; the small and stingy character of the muscles; the motions being slow and dragging; the skin pale and opaque; the countenance serious, bordering on gloominess, and by the tardily performed functions, both animal and vegetative.

The most distinctive and readily-perceived indication of this constitution, is the full and expanding character of the hemispheres throughout the whole extent of the parietal ridges and

* American Phrenological Journal.

the superior portion of the forehead.* The lateral portions of the cerebellum are particularly feeble and the nervous system is but tardily impressed by external agents.

One of its remarkable endowments, is the extent and development of the venous system; and it must perform as distinguished a part, as the portal system does in the bilious.

As there is, in this constitution, but a little action, so there is but little liability to disease. For the same reason, metamorphoses go on very slowly; and hence there exists no necessity for a rapid or vigorous assimilation. But, notwithstanding its feebleness, such is the adaptation of all its parts that it is compatible with health and old age.

This constitution is compatible with great learning and profound discrimination; but all the mental functions, though accurate, are tardy and feeble, like the animal and vegetative; and consequently no great achievement can be expected from it.

Dr. Thomas has stated, that when the brain is large, and the thorax and abdomen are small, there is great mental power. Where does this power come from, if not from the thorax and abdomen? We have never known a vigorous thinker who did not possess a well-developed thorax and abdomen. Men with small heads and large chests have achieved great results, but those of large heads and small chests have never become distinguished in the active concerns of life, and very rarely in any other.

This, and the preceding constitution, are very rarely to be seen in their extreme purity; but their combination with the sanguine and bilious, constitutes at least one half of society. The encephalic element in the constitution of Hon. Edward Livingston, the Hon. Lewis Cass, and Dr. Franklin, is remarkably conspicuous. Men of the encephalic constitution are few, and these have not become distinguished, hence it is difficult to obtain ample illustrations. We have seen several well marked cases of it, some of which were as good as Father Reinstadt, whose portrait is here presented as a fine illustration.

* A small admixture of it, in combination with the other constitutions, can be thus detected.

Dr. J. Mason Good regards Tasso Torquato as a specimen of this constitution, but I think it more than probable that he was bilious encephalic, with the latter element predominating. He had what is common to the encephalic, a precocity of genius. At the early age of seventeen years he was honored with degrees in the four branches of canon and civil law, and theology and philosophy. He wrote many poetical works, but finally became too much deranged to be useful. He was sparing of words, sedate and grave in manner, and in conversation displayed but little of the fire that animates his works. All this is highly characteristic of this constitution.

In consequence of the great feebleness of the vital forces, this constitution becomes almost incapable of an effort by or before the meridian of life. Very many of our most intellectual lawyers and divines, being highly encephalic, begin, by thirty, to feel their feebleness, and then resort to ardent spirits to obtain that force which nature had denied them, but which they might have acquired by early and constant exercise; but as they have no desire for action, they live in inactivity, not apparently knowing that without a strong body they cannot possess effective minds.

In the scholastic walks of life, there is a constant tendency to the degeneracy of the vital forces, with a corresponding increase, either positive or relative, of the encephalic element, of all the combinations in which it obtains. Those who possess it should therefore make it a law of their lives to blend with their mental pursuits some variety of muscular employment. This is a good doctrine for all persons, but more especially for the encephalic classes, to whom it is especially addressed.

We have deeply commiserated many lawyers and divines, who had become learned and manifested intellect and accurate discrimination, but who had no resource for that life-moving eloquence without which the masses of mankind cannot be effectively influenced. They had no *corps de reserve* for that reinforcement of their minds upon important emergencies. The truth is, we have many farmers and mechanics who could quell a mob by the energy of their voice or, a penetrating glance of their soul-stirring eyes, while many of our erudite and intellectual lawyers and divines would utterly fail. Is not

this humiliating, more especially as they have brought it upon themselves, or promoted it by a neglect of that law of God's kind providence which he intended should make them men and not women? As an illustration of this important principle, we will introduce a case.

While traveling through Tennessee, a young lawyer called upon the author for a phrenological opinion of himself. He was bilious encephalic, with a great preponderance of the latter element. We told him that he had a very fine head, but, unfortunately, he could apply it to no useful purpose. This surprised him, and caused him to demand of us an explanation of our meaning. We told him that his vital forces were too feeble to throw his brain into effective motion. "Then," said he, "what shall I do to be saved?" We answered, "Follow, sawing and chopping wood, walking and running, but, above all, fencing and dancing."

Ten months after this, we met with him, and such was the enlargement of his neck and thorax, that, at first, we did not recognize him, but when we did, we gave him our hand, remarking at the time, "You must have taken our advice?" "Yes," said he, "I have not omitted it a single day—I have labored, and I have a black fiddler who plays for me, and I make the young negroes dance with me when I cannot do better." He is now, we have learned, on the bench.

Did this young man do too much to make an *effective man* of himself? If our talents are not worth improving and our lives preserving, then certainly, they are not worth the having.*

* If the fact is not universal, it is at least very general, that those who die of phthisis pulmonalis before the forty or forty-fifth year of their age, have not a large head—the cerebrum is not remarkable for its size, even in relation to a comparatively small cerebellum. And we showed, when treating of this viscus, that the phthisical constitution consists in a disproportion of development between the medulla oblongata and the cerebellum. In the encephalic constitution, the cerebrum is large, but the medulla oblongata and cerebellum are both small, and upon this condition depends the venous or anti-phthisical condition of the encephalic constitution.

CHAPTER III.

THE COMBINATIONS OF THE ELEMENTARY TEMPERAMENTS.

INTRODUCTORY REMARKS.

IN approaching the consideration of the combination of the temperaments, it may be truly said, that we are venturing upon an uncultivated field. Nothing definite or descriptive has ever been written on the subject. If we consult authors on the primitive ones, we obtain nothing that can enable us to infer the combinations; indeed, all that they have given us amounts to about this: the sanguine man is a toy for the ladies—the creature of folly, extravagance, and dissipation;—the bilious man is the only great one, and he is so, simply because he has a great liver;—the lymphatic man is a disgusting sack of humors;—and the melancholic man is a poor, gloomy, miserable, liver-diseased wretch, whom it would be a mercy to dispatch.

If we shall then mix with the profession in the discharge of its active responsibilities, we shall obtain no additional light, and yet, all of them feel the great importance of the subject. The primitive temperaments are but rarely met with, hence it is impossible that one physician in a thousand can have any knowledge of them, and from what has been written, the combinations cannot be distinguished, hence it must be conceded that an accurate description and illustration of them cannot be an unacceptable service.

I. BINARY COMBINATIONS.

I. THE SANGUINE-BILIOUS TEMPERAMENT.

IN this constitution the head is smaller and the brain more dense than in any other variety of the species. A sight of the skull, at once, gives the idea of compactness. The poste-

rior lobes of the cerebrum are more developed, relatively, than in the sanguine, and the anterior ones are usually more perpendicular than in either of its elements; and this, we think, results from a less development of the perceptive powers. The superciliary ridge is, perhaps, invariably less marked—less prominent than in the sanguine or bilious. The forehead is never expanded; the nose is usually straight on the dorsum; the lips are moderately thin and of equal prominence; the cerebellum is never so developed as to lead to brutal excesses; the chest is round; the abdomen is slender but in a fine relation to the chest; the person is very erect; the muscles are slender, but very compact and strong; the bones are relatively well developed; the motions are all prompt; the skin, where excluded from the light, is very white, quite unlike the sanguine or bilious; the hair is coarse, thickly set, and black, or between a light and a red; the eyes are of a deep blue or bluish grey; the skin of the face and hands, if much exposed, becomes of a light tan or a red tan color. In cases where the sanguine element preponderates, the hair may only be brown or sandy; and if the bilious element preponderates, it will be black or red.

The vegetative functions are usually performed with great energy, and, comparatively, but little liable to derangement. The tenacity with which this constitution clings to life, has no parallel. We saw a negro woman, who was exhibited in Cincinnati, several years since, as a curiosity, on account of her extreme age—one hundred and twenty-seven years—and from documentary evidence presented, the statement of her age was probably correct. She was said to have been a nurse of Gen. Washington. She had totally lost her eyesight, but her hearing was good.

No other temperament can endure as much fatigue and exposure—it seems to have been intended for muscular action. In consideration of these capacities it is well adapted to a military life, to which very many of this class are much disposed.

Men of this class are principally adapted to mathematical, astronomical, chemical, and military sciences. They have not, however, that power of plan and system of movement, requisite for such positions as were filled by Bonaparte, Washington, and Scott. For subordinate positions they are

perhaps the best. For mental toil, under responsible and vexatious circumstances, they are not adapted—they become irritable and then rash. A capricious temper, is, so far as we have observed, a universal attendant upon this constitution.*

Powell, the London pedestrian, was a fine specimen of this constitution. In the English "Boxiana" there are several fine illustrations, and among them is Bill Neat, the English champion. The battle he fought that gave him his title of champion, was with Thomas Hickman, commonly called the Gaslight-man. Hickman rested his hopes upon his science; Neat, though not without science, placed his hopes upon his muscular strength and activity.

Men of this constitution are generally so light, that their strength is usually underrated, more especially by those who have large muscles. It was in this way that Hickman was deceived in Neat. When he first saw him, he said, in allusion to the contemplated fight, "Oh! I'll take the *shine* out of him in seven minutes." Hickman is not the only one who has been thus deceived.

Illustrations—Daniel Boone and General Jackson.

II. THE SANGUINE-LYMPHATIC TEMPERAMENT.

In this class of our race the skin is white and clear, and apparently translucent, with a delicate glow of the rose in the cheeks; the expression of the eyes is generally soft and agreeable; their color is but little above a sky-blue; the hair is light, rather thin and soft; the lips rather thick and of equal prominence; the nose rather short and straight upon the bridge or dorsum; in this respect a variation in the proportion of the elements will make a difference in favor of the element having the preponderance.

The outline of the person is full, plump, and soft; the motions of the body are rather slow and waddling; the back of the neck is broad, and so is the entire base of the head; the temples are highly filled; the corona is round but not expanded; and the whole head is nearly as round as that of the full

* A knowledge of the therapeutic compatibilities of the primitive temperaments will be a guide in the combinations. As we have done but little medical practice since becoming conversant with this subject, our readers have a fine field for discovery in the relation that exists between it and therapeutics.

lymphatic, but not usually so elevated. In the eyes of lean and dark-complexioned men, the females appear to be peculiarly beautiful.

We infer from a bust we have seen of Nero, that he belonged to this class—his character certainly harmonizes well with its criminal and degraded extremity. William Wirt, deceased, of Maryland, was of this constitution, with a slight preponderance of the sanguine. The “Boxiana” does not furnish an illustration. The tendency of this constitution is not to fight, but to kill.

As an illustration of this temperament, we refer our readers to the portrait of Judge Story, who, as a jurist, stands, we have no doubt, deservedly high—higher, we conclude from his organization, than he could possibly stand in any other position. He is constituted to reverence the law, and to possess, more generally than most men, an unbiased judgment. His head is more elevated than we have before seen in this constitution; and though elevated, it does not present the least indication of possessing a particle of the encephalic temperament. Compare it with the sanguine encephalo-lymphatic, the only constitution with which it can be confounded, at the parietal level of the head, and the difference becomes marked and obvious. In the decline of life his lymph appears to have been absorbed.

III. THE SANGUINE-ENCEPHALIC TEMPERAMENT.

In this temperament, the hair is light and rather fine; the eyes are of a pale blue; the lips are of moderate thinness, and the inferior one slightly the more prominent; the nose is slender and straight on the dorsum, when the elements of the constitution are well balanced; the skin is fair, but less clear than in the sanguine lymphatic; the person is light and slender; the muscles are thin and flaccid; the bones are small and have but slight muscular impressions. The lateral portions of the cerebellum are feeble, and therefore the neck is thin and small; the posterior lobes of the cerebrum are frequently much developed; the temples are even or depressed; the forehead is nearly vertical and superiorly full and expanded; the superciliary ridge is very slightly developed; the lateral portions of the head are flattened, and the superior, at the parietal

ridge expanded; and a line drawn from the condyles of the occipital bone to the inferior extremity of the superior incisors, will be very nearly parallel with the top of the head. No function of the system, whether animal, vegetative, or mental, is performed with energy.

This temperament, like one of its elements, is not adapted to the practical conflicts of life; nor is it fitted for the development of science. It is measurably confined to schools, colleges, and the three professions. The less gifted class of them never take rough and rugged trades—they are jewelers, tailors, etc.

Among the individuals of this class may frequently be seen learned and literary men, and occasionally a painter or a poet. They are usually conservative, because they have not sufficient constitutional force to brook the thought of, and much less to contend with, revolutionary movements. We express this only as a general fact, to which of course there are exceptions.

Illustrations—W. White, D. D., formerly of Philadelphia, Cowper, Channing, and Voltaire may be cited as illustrations, and they constitute a literary constellation.

In this constitution, mercurials and venesection should never be used; and quinine and morphine with much prudence—the former having much power to materially injure and even to destroy the sense of hearing

IV. THE BILIOUS-LYMPHATIC TEMPERAMENT.

In this class of men the lateral diameter of the head is less, and the occipito-frontal is relatively greater, than in the sanguine lymphatic. Like all the varieties of the lymphatic, there are no sharp angles about the head, face or person. The face approaches an oval; the superciliary ridge is well defined, but not so prominent nor sharp as in the sanguine or bilious; the superior sentiments are usually well developed, giving a handsome finish to the top of the head. The forehead usually recedes, but less than the bilious; the posterior lobes are of medium length and tolerably broad; the cerebellum is well developed, but laterally, not so much so as in the sanguine lymphatic. The person is full, plump, and round; the nose is respectable for size, and though usually straight on the dorsum, it is sometimes aquiline, and sometimes pugged. The

lips are tolerably thick, and of equal prominence; the hair is fine and brown, or it is fine and yellow or sandy, attended with sandy whiskers; the complexion is brown with a tinge of red, or it is reddish and freckled; the eyes are brown or bluish gray. The females of the dark variety are generally regarded as beautiful. Such beauties are said to be quite common in Mexico. Many of them occur in our southern states.

Not many of this class become distinguished, indeed, it may be said, that they constitute an unambitious class — seeming to care but little for notoriety or distinction. No class of men possess a clearer or sounder judgment, or more simple or artless manners. Very few of them visit the penitentiary, but too many of them do the beer-shop.

The English "Boxiana" furnishes one who became distinguished for his pugilistic abilities. From this reference it will be perceived that the constitution is not without muscular power and activity.

As illustrations of this class, we may cite the following: Raphael, General Nathan Greene, W. Pinkney, Rev. L. L. Hamline, Aaron Ward, ex-member of congress from New York, Alexander W. Buel, member of congress from Michigan, and President Filmore.

This class bears mercurials and quinine much better than any of the sanguine varieties, nevertheless, when there is lymph, we should be cautious.

V. THE BILIOUS-ENCEPHALIC TEMPERAMENT.

This is, emphatically, the temperament of philosophy. In this class is to be found some of the most distinguished philosophers of every age. By a union with the encephalic, the impatience and irritability of the bilious is removed, and a large development of the front lobes is secured. It is incomparably more favorable to the development of a highly masculine character than the sanguine encephalic.

In this constitution we find heads which have their occipito-frontal diameter as high as eight and a-half inches. Laterally, they are flattened; the anterior and posterior lobes are highly developed in length, but it is not common for them to be highly expanded at the base. The cerebellum is not, laterally, highly endowed—not so highly as to incapacitate for

sedentary habits, to any required extent, and not so feeble as to deny to the possessor a respectable share of muscular ability. When the encephalic preponderates, as it very frequently does, then the cerebellum is feeble, and so are the animal and vegetative functions. No constitutional class of the species furnishes such extremes, in strength of character. Some are guides to the species, while others have scarcely force enough to maintain existence, and yet intellectual.

In this class, the whole forehead is fully developed ; and, as in all who partake of the encephalic, the parietal or superior lateral portions of the head are quite prominently so. The intellectual and moral capacities of this class so preponderate over the propensities, that they are but seldom seduced into gross vice or crime.

Those who shall become familiar with the bilious head, will have only to add to the superior portions of the frontal lobes, and the superior lateral portions of the hemispheres, to distinguish this from any other.

The hair is fine and brown or sandy ; the skin is dark or bilious, or it is reddish, without much apparent life, or it is such as contra-indicates much cutaneous circulation. The eyes are brown or bluish gray ; the nose is unusually straight on the dorsum, or a little aquiline, or a little of the opposite curve ; the lips are of moderate thickness and usually of equal prominence, but the inferior one commonly turns a little out at its upper edge. There is a difference between the brown and the red varieties in this respect : the former are inclined to the physical sciences, and the latter to the abstract.

Mercurials, quinine, and morphine are as compatible with this constitution, as with any other. We have never seen but one man of this constitution in states' prison, and he was in for counterfeiting a bank-note plate — he was an able engraver.

The "Boxiana" furnishes one specimen of this constitution—Tom Owen, the conqueror of Bully Hooper. He was true to his constitutional predisposition : he gained his battles by his science. Few boxers, it is said, have fought more battles than Tom Owen. In the character of a second, he was inferior to no one on the list.

As illustrations of this constitution, we may cite Lord

Bacon, Professor Caldwell, the late Chief Justice Marshall, and Professor James Jackson.

It is in this constitution, and the encephalo-bilious lymphatic, that the mistake of attributing all the great men of the world to the bilious temperament, originated. If, however, they had been placed in these classes, it would have still been a great error.

VI. THE ENCEPHALO-LYMPHATIC TEMPERAMENT.

We have never seen a specimen of this constitution, nor can we conceive it to be possible that such an one could be produced in this country. By inference, we conclude that it may exist. In the study of thousands of prints we have seen but one that we could not place under some other head. As the character and person of this temperament can be inferred from its elements, and as twenty millions of inhabitants do not probably produce an illustration, it cannot be considered to claim further attention than we have given it—a place in our classification.

As, however, the sanguine encephalo-lymphatic is frequently met with, even in this country, it is highly probable that in Holland the encephalo-lymphatic elements may so predominate, in some instances, as to constitute such a constitution.

II. TERNARY COMBINATIONS.

I. THE SANGUINE BILIOUS-LYMPHATIC TEMPERAMENT.

This combination produces a greater variety than any other. Illustrations of it abound plentifully in every walk of life, in every grade of society, and in every degree of virtue and vice—and always practical.

The individuals of this class, while living, are very distinguishable from all others, but the differences between the crania of this and some others are much more easily perceived, by a practiced eye, than described. The skull, however, cannot be mistaken when it is at all balanced, for that of any one of the lean varieties; because it is not so angular. It is

neither so large nor so round as the lymphatic, nor is it so round as the sanguine lymphatic; the posterior lobes are more, and the middle lobes are less, developed; the cerebellum is developed downwardly more, and laterally less; the glabella and superciliary ridges are much more rough, and the general texture of the bone is less close and compact.

The person is full, and usually has the appearance of considerable solidity. The muscular movements are much more active and ready, than we would, *a priori*, imagine, and in the abstract, inferior to no other in muscular strength.

The complexion is about that of the sanguine bilious; the hair is coarse and brown or reddish; the eyes are of a bilious blue or bluish gray; the lips are tolerably thick and of equal prominence, but never, or very rarely, beautifully defined; the nose is rather short and straight, or it is pugged, and sometimes aquiline, depending upon the preponderating element. Apoplexy frequently occurs in this constitution.

The "Boxiana" furnishes about twenty specimens of this constitution, and Jack Broughton stands at the head of the list. He maintained the championship of England for eighteen years. In the prisons of all of our states a list proportionally as large as the preceding, can be found. They are a busy set of fellows in mobs and riots. They are very generally courageous, gregarious in their attachments, and generous in their deportment.

As illustrations of this constitution, we may cite among the distinguished, Baron Larry, Professor Hare, Stephen Girard, Pope Leo X, Major-General Henry Knox, Dr. Spurzheim, and Lawrence Kearny.

II. THE SANGUINE ENCEPHALO-BILIOUS TEMPERAMENT.

This constitution, like the preceding, in consequence of comprising three elements, produces a great number of shades or varieties. At one extreme, we find a high grade of the encephalic, and on the other a close approximation to the sanguine or the bilious, but more frequently to the sanguine bilious. It is far more fibrous and enduring than the sanguine encephalic; more intellectual, that is, more expanded or various than the sanguine bilious, but less tough and less tenacious of life. When once seen and designated, in the white race,

it will very rarely escape detection. It possesses usually, a higher degree of susceptibility than any other constitution. It is really the most nervous, and when pretty equally balanced, it is highly vivacious.

In this constitution are to be found many of the masters of the fine arts—it might, with considerable propriety, be called the artistic temperament. Some of the finest specimens of the race are found in it, and if the information we have received be correct, it comprises a large proportion of the Caucasians.

Although the crania of this variety are readily distinguished by a practiced eye, yet it is difficult to describe it so accurately as to designate all the shades of difference. The head, however, is usually about the size of the sanguine encephalic, possibly a little larger, but more compactly formed—not so long but rather broader; the cerebellum is more developed laterally; the parietal ridge obeys the common form of the encephalic, but is more angular; the forehead is usually quite vertical and square, sometimes, however, it is full and round; the superciliary ridge is very generally more transverse than with other crania, and the glabella is rather narrow but rough, like the sanguine bilious lymphatic, but not so prominent; the temples are usually depressed, while the head expands above them. The hair is brown or sandy and of moderate coarseness; the iris is of a clear darkish blue, or bluish gray; the skin is like that of the sanguine bilious; the nose is of moderate length and size, and straight on the dorsum, when well balanced; the lips are tolerably thin, with the inferior one a little turned outward—an almost uniform characteristic of the encephalic and all of its combinations.

The “Boxiana” furnishes one specimen of this class, who was highly esteemed for his courage, and, as a boxer, had considerable reputation. He never, however, obtained the championship.

The president elect, General Franklin Pierce, is the only individual of this constitution, who has ever figured in the official stations of an army, so far as we have been able to learn.

Very many individuals of this class are the victims of consumption. Those in whom the encephalic predominates much,

seek positions in schools, churches, etc., while those who partake largely of the sanguine bilious are found in the more practical concerns of life.

As illustrations of this constitution, we may cite John C. Calhoun, Professor Daniel Drake, T. R. Beck, M. D., and G. A. Mantell, L. L. D., F. R. S.

III. THE SANGUINE ENCEPHALO-LYMPHATIC TEMPERAMENT.

This constitution is but seldom met with in this country, that is, it is not seen every day, even in a large city; but in Holland it is of frequent occurrence. It is far from being an active condition of the system, but it is, perhaps, unequaled for industry and patience; consequently, men of this class frequently accomplish more, in the course of life, than others of a more forcible and active nature.

There is just enough of the sanguine in it to maintain a moderately vital action; the encephalic furnishes a high order of mental organization, and the lymph saves it from irritability. The head is large and rather quadrangular; the posterior lobes are very broad in densely populated countries; but in this, where they are cultivated by a necessity for go-ahead or forward movement, in the prosecution of business, they are considerably longer but not so broad;* the anterior lobes are elevated, prominent, and broad; the sides of the head are flattened; and the parietal ridge is prominent, but not sharp; the cerebellum is broad; the superciliary ridge is but little developed; the skin is of a pale white, passing into a slight translucency; the person is full and soft, and though abundant, the muscles appear to be stingy; the flesh hangs loosely from its attachments; the iris is of a moderately pale blue; the nose is moderately thick, rather short, and straight on the dorsum; the lips are not so thick as in the other forms of the lymphatic.

Many of the German scholars and philosophers are of this constitution; but generally they are more distinguished for their learning, than for their discoveries or originality.

The justly distinguished Dr. B. Franklin is an illustration

* These remarks apply to all temperaments, but their truth is less obvious in the lean and dense varieties.

of this constitution : also the late Dr. Troost, of the university at Nashville, Tennessee, Major-General Lincoln, and the Hon. Lewis Cass.

IV. THE BILIOUS ENCEPHALO-LYMPHATIC TEMPERAMENT.

The head, in this constitution, is more dense than in the preceding, and therefore not so large. The posterior lobes are about as in the previous temperament, except that in the former the parietal projections are large or more prominent, and so is the superior portion of the forehead, but in this constitution the forehead is more round, and apparently more compactly put up ; the corona and the hemispheres are not so elevated nor so much expanded ; the cerebellum less broad, but more developed downward. The hair is fine, brown, or auburn ; the eyes are brown or bluish gray ; the nose is straight, aquiline, or pugged ; the lips are of tolerable thickness, and most generally defined handsomely.

This temperament is admirably calculated for the development of great subjects, but not so ready or instantaneous as many others. The men of this class are more than ordinarily liable to the use of unnatural stimuli, and by this means the usefulness of many of them is greatly abridged.

It is not a very difficult matter for those of the sanguine constitution, and its combinations, to quit the use of tobacco, coffee, tea, and even ardent spirits ; but the reverse is the case with those of the bilious and its combinations ; hence those varieties should be careful how they indulge, unless they intend to contract a permanent habit.

As illustrations of this constitution, the Hon. Daniel Webster, Peter the Great, and Dr. Gall.

The portrait of Mr. Webster, as seen in the American Portrait Gallery, was taken at a period of life too young for a full development of the lymphatic element ; and in his old age the lymph appears to have been absorbed.*

If we have been correctly informed, this combination is of

* It may be as well for us to remark, that as we have to be governed by the published portraits of distinguished individuals, it follows that if they be very inaccurate, we may err—and in this way we may have erred.

frequent occurrence in Persia. The females are very beautiful, and the men fine looking and commanding. Of this constitution and the preceding, the "Boxiana" gives us no illustration; nor does it of the one that follows.

III. QUARTERNARY COMBINATIONS.

I. SANGUINE BILIOUS ENCEPHALO-LYMPHATIC TEMPERAMENT.

This is possibly the most favorable combination that can happen in the species, with reference to the highest order of achievements. The sanguine gives force—the bilious, motive and durability of impression—the encephalic, mental apparatus—and the lymphatic equalizes them, or prevents waste by preventing useless motion; or, in other words, it prevents that irritability of the fibrous tissues which so rapidly hastens that metamorphosis which wears out and exhausts the lean varieties. Under this condition, and that species of absence from all animal wants, which the encephalic imparts, it is, that men of this class can excel all others in doing without food, sleep, and repose.

The head is above the average size, and developed in all of its aspects, and yet preserves, considerably, a quadrangular form, particularly when the intellectual lobes are not prominently developed. The hair is brown or sandy and of moderate fineness; the eyes are of a dark blue or bluish gray; and the face, how shall we describe it? No part, unless it may be the forehead, appears too large or too small, and yet there is not that blending and losing of one part into another that generally characterizes the human face. Each part looks as though it had been separately made—finished and then fitted to its place. In fine, a *sui generis* abruptness, a right-angledness marks, not only the face, but the whole body.

The person, though full, is nevertheless quite firm and compact, and the complexion, beside having the blue tint common to the other combinations into which the sanguine and the bilious enter, has a shade of brown, or it is fair and rather florid. The former variety darkens greatly under the influ-

ence of light. As this constitution does not obtain frequently, many distinguished illustrations of it cannot be given, but Napoleon Bonaparte, Caius, Julius Cæsar, and Mr. Whitney, of Pacific and Atlantic railroad notoriety, may be cited.

CONCLUDING REMARKS.

IN the application of this subject to national crania, except to some of the nations of Europe—their descendants in America, our negroes, and some of our native tribes, much difficulty will be met with in consequence of cranial deformities. That an artificial deformity of the head can become permanently congenital, we have the facts to prove beyond the possibility of a doubt. And that considerable deformity can be, and is, produced by slight and even unintentional causes, we have as little doubt.

The Osage Indians are known to have the occipital portion of the head broad, flat, and generally deformed, so that the occipital foramen approximates very closely to the posterior basis cranii. We believe that the cause of this is to be sought in the fact that they strap a board to the backs of their children. The occiput is continually in contact with the board—bound to it by a strap passing over the sinciput. We have seen German, Polish, Swiss, and Tyrolese crania flattened, more or less, like the Osage, and we think it probable that each of them is referable, remotely, to some similar cause.

A portion of the Choctaw tribe of Indians have a congenital deformity of the cranium—the result of artificial deformity which was produced by their remote maternal ancestors, the Shockshumas. Of this fact, we have a chain of evidence, with illustrations, that cannot be invalidated.

In cases of cranial deformity, the want of harmony between their several parts, will usually determine whether they have, or not, been deformed, and by restoring these relations, pretty correct conclusions may be arrived at by careful examination.

It is possible for an individual to become so conversant with our doctrines of the temperaments, as to apply them with great facility and accuracy to the population of one country,

and fail with reference to those of another, unless he shall have given an extensive attention to those of other countries ; because different conditions in human society very materially modify the human head. In old and densely populated countries, it is broader and shorter than it will be found where the population has for centuries, or even for several generations, been subject to a contrary state of social existence. These remarks are intended to place students on their guard when studying foreign crania.

The several races, and even different branches of the same, present considerable differences of external configuration, and it is worthy of remark, that those of the latter are equal, at least, to those of the former ; and the constitutional marks, as we have unfolded them, are as clearly indicated upon savage crania as upon the civilized. There is, however, one difference—the triple combinations with the encephalic are never met with, and even the binary is so rare as scarcely to deserve a notice.

The encephalic constitution appears to be a result of civilization—a product of moral and literary culture—the work of many centuries. It is founded in a higher development of the cerebral hemispheres than is necessary to the savage mode of existence.

With a higher development of the hemispheres is associated diseases to which the savage is a stranger—this we believe to be particularly the case as regards phthisis pulmonalis and its kindred affections. But each constitution has its physiological, pathological, and therapeutical peculiarities, and the inhabitants of each country differ, in these three respects, from those of others ; and a neglect of these conditions has done very much to retard the advancement of pathology and therapeutics. Remedies that succeed in certain diseases in one country, in a great measure fail in another, because of the difference of constitution. How should it be expected that the most effective remedies upon the sanguine and sanguine lymphatic constitutions of the north, in which the skin and kidneys are the great depurators, should succeed with the bilious and bilious lymphatic constitutions of the south, in which the portal system and the mucous lining of the intestinal canal are the great depurators ?

We have not time, nor is this the place, to do more than to briefly hint at the importance of a knowledge of the human temperaments ; and if every circumstance favored such a purpose, we confess ourself unable to do it justice, nor do we pretend to have discovered all the facts that are involved in it, nor to have properly applied all those which we have discovered ; and yet, the success that has, for many years, attended our demonstrations, would seem to prove that we have succeeded in establishing a foundation that will sustain the discoveries, in this connection, of all future ages. It is for others, therefore, to finish the edifice.

If any one had suggested to us, twenty-two years ago, the possibility that a time would come when physiologists would be able to read, from the naked skull of a Caucasian, the color of his hair, eyes, and skin, and the details of his personal condition, we would most certainly have regarded him as exceedingly visionary ; and if he had gone further, and added, that they would also do the same with facility and ease from chirographic marks alone, we would most assuredly have concluded that he was insane.

We are not, therefore, surprised that people now should be as skeptical as we were then. We are not surprised that even Professor Caldwell should have suspected us of being guilty of a mere "pretension," but we were surprised that he carried his incredulity as far as he did, knowing that such a "pretension" was not in contravention of any established law—that we had the same immutable laws of animal organization to guide us, that guided Cuvier—the two subjects being only parts of the same, and about equal in magnitude and difficulty.

It is known that differences exist between all the individuals of society—and will any one affirm that these differences are not impressed upon the solid parts of the system ? Will any one affirm that it is impossible to classify these differences ? The great wonder with us, at this time, is that the discovery was not made a century or two since, because the subject has had the attention of physiologists ever since the dawn of the profession.

As all the facts or conditions involved in the subject exist in abundance, we may certainly conclude that no one is stupid

enough to assert that they cannot be arranged, and if they can be arranged, then our "pretension" is possible, and being possible, it does not involve an impossibility.

But, says one, "thus far I have some faith in your pretension, more especially as Cuvier did as much in another department of the same great subject, but you have gone far beyond him in asserting that you can distinguish the temperaments by chirographic marks." Very true; and what are marks made with a pen but acts of the individual, in any given case? And will any one assert that a man with a round head, will use his pen like one who has a long head? The very idea is preposterous. If differently shaped heads did not dictate differently shaped marks, and if certain parts of the same head did not produce marks that differed from those of other parts of it, we should have never made such a pretension. But as the contrary of all this is true—that is, as each organic form makes its own peculiar mark, we are enabled, by seeing the marks a man makes in writing a letter, to arrive at a knowledge of the form of his head, which determines his temperament—yes, and his character too.

Such is the amount of public incredulity upon all new discoveries, more especially if they relate to humanity, and still more especially as regards *our* "pretensions," as Professor Caldwell has been pleased to regard them, that we hope to be excused for attempting to sustain our own declarations, by adding the testimony of others. We do not do it, however, with a view of convincing any one—such conviction is useless—but for the purpose of preventing any rash action with reference to them—to induce all to withhold an expression of opinion until they shall investigate the subject; and, as far as possible, to induce others to examine it.

If we have, unaided, made such progress, it would seem to be an easy task, with the aid of our instructions, for others to advance beyond us—some of our pupils, in some practical respects, are now in advance of us. Out of the many certificates we have, confirming the validity of our "pretensions," we shall present but two; one from the Hon. Judge Chalmers and Dr. Reed, testifying to the accuracy of our discriminations upon crania; and another from a number of medical gentlemen, who testify to an equal accuracy upon chirographic marks.

"HOLLY SPRINGS, MISS., December, 1840.

"We presented the skull of Loper to Dr. Powell, before his audience, which was large, to test his ability as a phrenologist, but more particularly to test his pretension of distinguishing temperament by the denuded skull. We are sure he had no information with regard to Loper—we guarded our own secret. He informed the audience that the skull he held in his hands indicated a sanguine bilious lymphatic man—that his person was full and round, not too lymphatic to be both strong and handsomely shaped—that he had had darkish blue eyes, and dark brown hair. In the above remarks he was peculiarly correct; and so far as is known, he was equally correct in pointing out his character.

Jos. W. Chalmers,
Will. S. Reed, M. D."

The following certificate is equally conclusive:

"MEMPHIS, TENN., February 24, 1851.

"We, the undersigned, gave to Professor Powell, at the close of one of his lectures, about thirty letters, from gentlemen who were known to us, but unknown to him. In each instance he gave the complexion of the hair, eyes, and skin, make of person, shape of the head, and the mental character of the writers; and with a precision that could not have been surpassed by their personal acquaintance.

T. B. Burnet, M. D.,	S. R. Jones, M. D., Phys. Prof.,
Geo. Salmon, M. D.,	J. King, M. D., Mat. Medica
D. S. Mills, M. D.,	Prof.,
J. A. Powell, M. D.,	R. S. Newton, M. D., Chirurg.
W. G. Weathersby, M. D.,	Prof.,
N. D. West, M. D.,	J. B. DeWitt, M. D.,
A. L. Gray, M. D.,	G. J. D. Funchess, M. D.,
	J. A. Secord, M. D."

There remains to be considered two applications of the temperaments—one of which is, perhaps, only interesting, but the other is of paramount importance to society. We allude to the parental likeness of progeny, and to the degeneracy of the species by a union of incompatible constitutions in marriage.

It has long been known that the intermarriage of near relations, in consanguinity, will produce degeneracy in the

species; but so far as we have learned, it has not hitherto been known that the union of incompatible temperaments produces a more fatal degeneracy of the vital forces, than any variety of that which attends those of consanguinity. The results are so strongly marked and so particularly fatal, that we cannot imagine how it should have so long escaped the attention of physiologists. A tolerably full consideration of this subject will be found in the next Book.

As regards parental likeness, we have to observe, that it is an old opinion that the sons who resemble their father or his family, and the daughters who resemble their mothers or her family, are inferior to their parents, respectively. We believe this opinion to be founded in truth—in an organic law that governs all animal existence; except when the parent or family, so resembled, is of the sanguine constitution. With this exception, the following observations will be found to be generally true. The reason of this exception may be inferred from what we have said upon the sanguine constitution.

Sons should resemble their mother, and daughters their father, and when they do, the fact is indicated by the full, round, and symmetrical forehead; and when the contrary is unfortunately the case, the front of the forehead is flat, indicating a shortened condition of the front lobes of the cerebrum—the face and forehead appear upon the same plane. Bonaparte and Washington are fine illustrations of maternal resemblance. Among the distinguished we know of no illustration of paternal resemblance.

Those of a mixed resemblance, who have inherited the best elements of both parents, are superior to them; but, on the contrary, those who have inherited the inferior qualities of both, are inferior to both—possibly idiotic. In either event, the middle or relative range of the forehead is more or less depressed. According to this law we can comprehend why it is that we sometimes find the two extremes of mental ability in the same family of children. As illustrations of such a mixture, we may cite the Hon. J. C. Calhoun and Chief Justice Marshall.

This Book now closes, and as it is, in a great degree, the work of one mind, an exemption from error is not claimed for it; and yet its fundamental truths are demonstrable.

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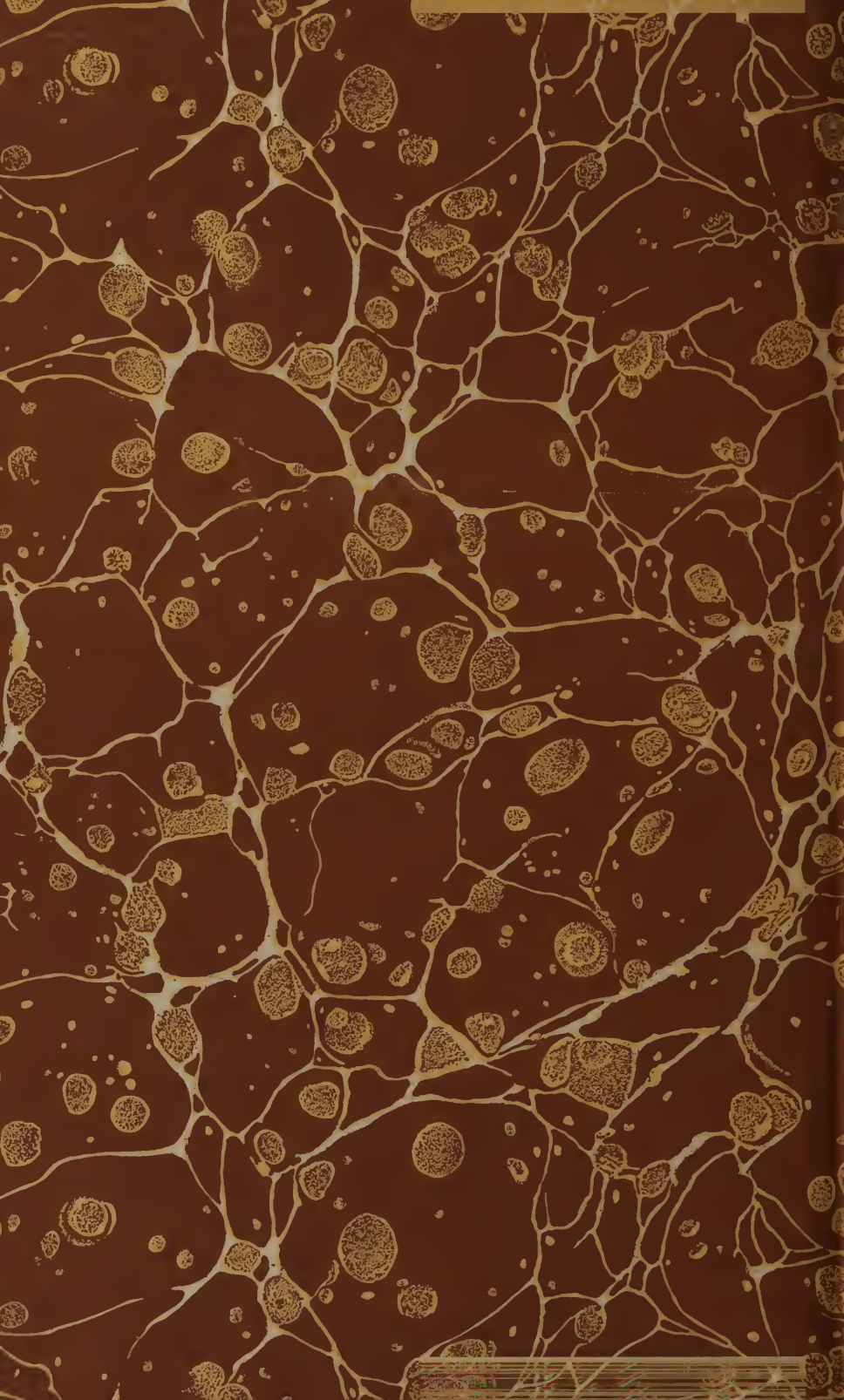
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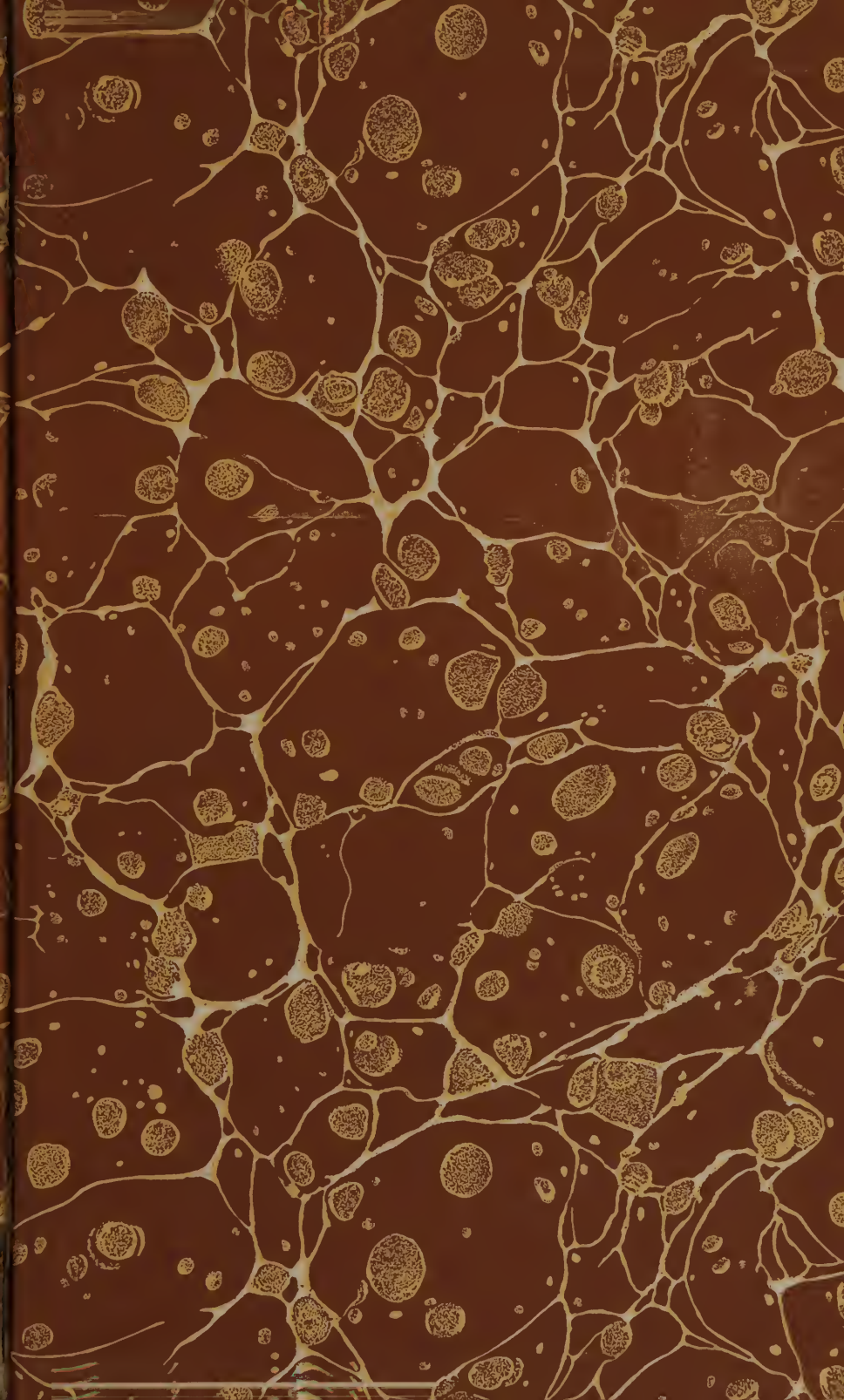
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